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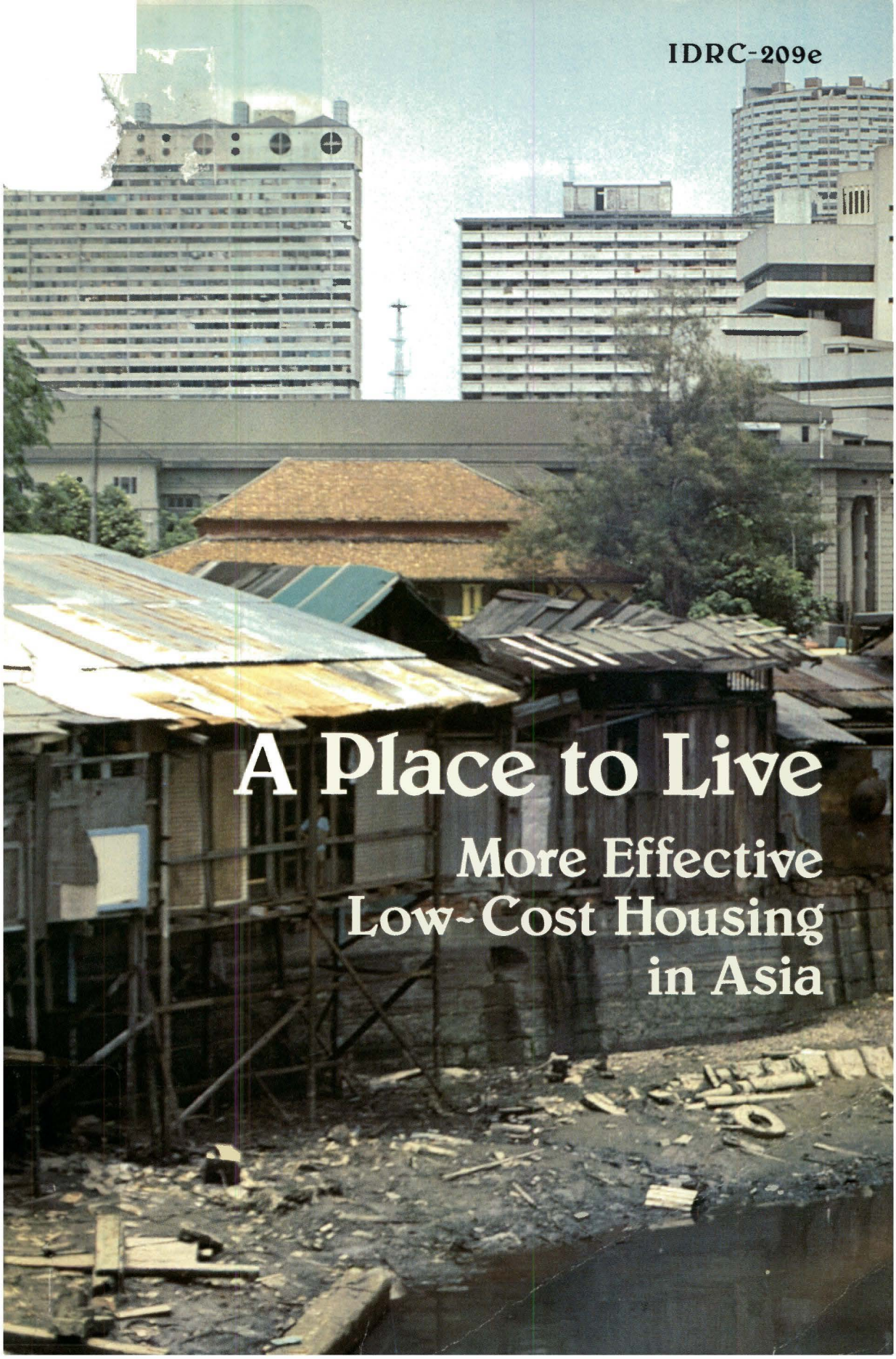

A Place to Live

More Effective Low-Cost Housing in Asia

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A PLACE TO LIVE: More Effective Low-Cost Housing in Asia

Editor: Y.M. Yeung

Résumé

Dans un climat d'urbanisation rapide et de pauvreté générale, le problème du logement des populations pauvres constitue un défi pour la plupart des gouvernements de l'Asie. Cet ouvrage passe en revue les principaux programmes d'habitations à loyer modéré qui existaient à la fin des années 1970 dans six pays asiatiques.

A Hong Kong et à Singapour, les programmes de logements sociaux ont contribué considérablement à répondre aux besoins d'une grande portion de la population. Cet ouvrage examine l'expérience récemment acquise dans l'aménagement de nouvelles villes et la construction subséquente de logements sociaux. Dans les deux villes-états, on a tenté de mettre l'accent sur la gestion du logement en l'adaptant plus étroitement aux besoins, nouveaux et réels, de la population.

En Thaïlande, aux Philippines, en Malaisie et en Indonésie, des programmes semblables, mais adaptés aux pays, ont été mis sur pied afin d'améliorer les conditions d'habitation de la population pauvre. La plupart de ces programmes visent plus particulièrement les bidonvilles et les taudis des grandes villes, mais certains portent sur les besoins d'habitation de la population rurale. Ces pays ont lancé beaucoup de projets d'aménagement des sites et des services et d'amélioration des services existants. Leurs gouvernements accordent de plus en plus d'attention au problème du logement, et ce changement d'attitude a été renforcé par l'aide financière internationale qu'ils reçoivent depuis quelques années. Des projets innovateurs entrepris par la population même, qui a dans une certaine mesure réussi à satisfaire ses propres besoins d'habitation, viennent s'ajouter en complément des programmes subventionnés par des organismes nationaux et internationaux.

Resumen

Frente a la acelerada urbanización y expandida pobreza, la vivienda para los grupos menos favorecidos se ha convertido en un reto para la mayoría de los gobiernos Asiáticos. Este volumen reseña los principales programas de vivienda de bajo costa realizados a finales de los setentas en seis países Asiáticos.

En Hong Kong y Singapur, el progreso de los programas de vivienda popular para hacer frente a las necesidades de grandes sectores de la población ha sido considerable. Se resume la experiencia reciente en desarrollo de nuevas poblaciones y la provisión de vivienda popular. En ambas ciudades-estados ha habido un intento por colocar mayor énfasis en la administración de la vivienda, haciéndola más receptiva a las necesidades nuevas y reales.

En Tailandia, Filipinas, Malasia e Indonesia, han surgido programas similares, específicos de cada país, para mejorar las condiciones de vivienda de los pobres. La mayor parte de estos se centran en los tugurios y barrios marginales de las grandes ciudades, aunque algunos están dirigidos a las necesidades de vivienda de la población rural. Entre los proyectos destacados en estos países están los de lotes con servicios y los de mejora comunal. Los gobiernos respectivos dedican cada vez más atención a la vivienda para lo cual han contado con el respaldo de la asistencia internacional en los últimos años. Complementando estos programas apoyados nacional e internacionalmente están también los empeños innovadores de la misma gente, los cuales han alcanzado un cierto grado de éxito en la provisión de la vivienda propia.

Contents

Foreword

In spite of all the material and economic progress developing countries have been able to achieve during the postwar period, shelter remains a basic need that has proven to be intractable and difficult to satisfy. In Asia, while notable success has been attained in the city-states of Hong Kong and Singapore in housing the masses through the use of public funds, shelter problems for most of the poor in other countries have in fact exacerbated over time. Housing the poor remains high on the agenda of development priorities in many Asian nations.

The International Development Research Centre (IDRC) has supported several research projects that were designed to seek a better understanding of the nature and scope of low-cost housing provision in developing countries. Worthy of mention in Asia is the eight-country project conducted between 1972 and 1975, which resulted in six published country studies and a comparative volume, *Housing Asia's Millions* (IDRC-104e). Another important large-scale enterprise, jointly supported by the World Bank and IDRC, was an evaluation study of the World Bank-assisted sites-and-services and slum-upgrading projects in four countries across three regions in the developing world. Publications from this project include a bibliography (IDRC-TS41e) and a comparative monograph (IDRC-208e).

Building on these previous efforts, the present volume is intended to expand and update the stock of knowledge on the subject of low-cost housing in Asia. In particular, it goes one step beyond *Housing Asia's Millions* by reviewing specific housing programs and policies aimed at improving the housing situation for the poor. Regardless of whether the program is in the form of public housing in new towns in Hong Kong and Singapore, the Zonal Improvement Program (ZIP) in Metro Manila, or the Kampung Improvement Program (KIP) in Jakarta and Surabaya, it is planned with the objective of ameliorating the shelter problem of the largest number of low-income families possible within existing financial, political, and cultural constraints. As many of these programs have recently begun to receive support from international agencies, the outlook for immediate improvement in housing conditions for the poor has improved. In relation to the real needs of the low-income population, however, it is recognized that in some cases the programs to date have made only small inroads on the problem.

This volume results from collaborative efforts between the Directorate General of Housing, Building, Planning, and Urban Development (Cipta Karya) of the Government of Indonesia and IDRC, which jointly provided support for a seminar hosted by the former in Bali in April 1981. Most of the papers in this volume were prepared for that seminar, although many of them have been extensively revised and expanded. The Centre has undertaken the publication of this book, which remains a joint contribution

between the two collaborating institutions. Along with the growing literature on the subject and recent Centre publications, it is hoped that this volume will contribute to our quest for policies and programs for more effectively housing the poor in Asia.

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Preface

In the same salubrious and enchanting environment, with its emphasis on the use of traditional building materials and the blend between man and nature, the government cottages at Werdhapura on Sanur Beach, Bali, played host, in 1973 and 1981, to a group of researchers and policymakers interested in Asia's low-cost housing. On the first occasion, the group was to discuss and decide on a scheme to mount a comparative study arising from an eight-country project funded by IDRC on low-cost housing in Southeast Asia. At the second meeting, which was attended by some of the original participants, the group was to update and report on some of the significant innovations, in terms of policies and programs, that Asian countries had brought to bear on providing better housing for the poor. The Directorate General of Cipta Karya of the Government of Indonesia and IDRC played similar sponsoring roles on both occasions.

The 1981 seminar was a response to specific requests by some members of the original low-cost housing project who drew the Centre's attention to recent and important program innovations in housing the poor in Asia since the completion of the project and publication of the results. Thus, the substantive focus of the seminar was to evaluate the delivery of low-cost housing in Asia, which was to be undertaken in two major parts.

Firstly, an evaluation could be attempted on the high-rise, high-density living environments that had characterized low-cost housing provision in Hong Kong, Singapore, and, to a lesser extent, Korea. Within these environments, emphasis would be placed on new towns, whose recent development had been associated with economic growth and low-cost housing provision to a large proportion of low-income families within their financial means. Unfortunately, because of some last-minute contingencies, the Korean participants were not able to attend the seminar. Secondly, for the other participating countries from the Association of Southeast Asian Nations (ASEAN), it would be instructive to examine recent low-cost housing programs, both nationally and internationally assisted, under the rubric of what is sometimes called spontaneous settlements. These include a rich variety of country-specific programs consonant with their cultural and social aspirations.

As in the 1973 gathering, many of the participants attending the 1981 seminar were drawn from national housing agencies responsible for devising and implementing programs and policies to improve the housing conditions of the millions who suffer from tenure insecurity, overcrowding, the lack of basic services, and other related deficiencies surrounding the problem of shelter. Their continuing readiness and interest to take time from pressing day-to-day tasks to meet and exchange experiences was testimony to the enduring network of friendship and camaraderie forged during the earlier project. This was one of the valuable and lasting out-

comes of the project.

Precisely because of the rapport established, the participants took advantage of the Bali seminar to engage in a dialogue of unusual intensity and candor. For instance, Sidhijai Tanphiphat chronicled the evolution of the present low-income housing policy in Thailand by showing its initial erroneous emphasis on conventional housing provision, which crippled subsidization efforts and resulted in inconsequential output. Equally valuable were Suyono's overview of Indonesia's Kampung Improvement Program, with its longitudinal data and discussion of implementation problems, and E.G. Pryor's detailed accounting of government planning procedures when embarking on any major development project in Hong Kong. These as well as most other papers were written by decision-makers who are experts in the subjects they address and who have the benefit of years of practical experience.

For a variety of reasons, however, not all of the papers presented at the Bali seminar are presented here. Nor were all of the papers included in this monograph presented at the meeting. This volume is intended, therefore, to update and increase current knowledge on the subject of low-cost housing in Asia. With this in mind, it is hoped that the Introduction will provide the conceptual and policy backdrop against which the papers may be seen in their larger developmental contexts. We have tried to organize the papers in this volume in a logical manner and to maintain accuracy. As the volume editor, I accept full responsibility for any remaining errors or shortcomings.

For the successful completion of this project, we owe a debt of kindness and generosity to many individuals and institutions. First and foremost, our deepest appreciation is extended to the Directorate General of Cipta Karya, Indonesia, especially to the Director General himself, Ir. Radinal Moochtar, for collaborating with the Centre in this project and for providing incomparable host facilities and logistical arrangements during the 4-day seminar in Bali. Several staff members from Cipta Karya, Jakarta, were deployed for the seminar to ensure its success and the well-being of the participants. In this connection, the contribution of Ir. Albert Kartahardja and Ir. Hendropranoto Suselo should be mentioned. Thanks are due to Cosmas Batubara, Minister of Housing of Indonesia, who graciously opened the seminar and delivered a keynote address. Finally from Indonesia, active support from the National Urban Development Corporation (PERUMNAS), in particular its President–Director, Ir. Soenarjono Danoedjo, is gratefully acknowledged. Likewise, strong support was provided by many national housing agencies in the region, such as that from Taha Ariffin of the Housing and Development Commission, Kuching, Sarawak; General Gaudencio Tobias and Rey Vergara of the National Housing Authority in the Philippines; Dr. Jose C. Benitez of the Ministry of Human Settlements in the Philippines; and B.V. Williams of the Housing Department in Hong Kong. The initial encouragement of this project provided by Prof. Stephen H.K. Yeh, Tan Soo Hai, Dr. David Steedman, and Dr. Alan Simmons was crucial in bringing it to fruition. Dr. Jingjai Hanchanlash and Miss Betty Lee of IDRC's Asia Regional Office in Singapore provided excellent administrative support and travel arrangements for the participants and their assistance is highly appreciated. To my colleagues in Ottawa, I am indebted to Robert Drysdale of the Communica-

tions Division who attended the seminar and provided skillful editorial help in the production of this volume and to Ms. Margo Montieth of the Centre Library who helped trace many of the recent publications through repeated bibliographic searches. I also wish to thank Dr. François Bélisle and Mrs. Alison Hedderich-Rowe of the Social Sciences Division for their support of the work for this book. Last but not least, my gratitude is reserved for the participants and observers at the Bali seminar for their active participation and eagerness to learn together in order to reach our common goal.

Y.M.Y.

Introduction

Y.M. Yeung

During the period 1950–1980, Asia's urban population increased from 216.3 to 689.3 million, representing 15.7 and 27.4%, respectively, of the total population. It is anticipated that at this century's end, the corresponding figures will increase to 1.4 billion and 38.9% (Hauser and Gardner 1982). These figures, partly empirical and partly extrapolated, over the 50-year period, clearly underline the acceleration of urbanization in Asia. Asia's urban population more than tripled in the 30 years from 1950–1980, and will likely double again in the next 20 years. By the year 2000, Asia will reach a level of urbanization approximately equivalent to what was experienced in Europe at the turn of the present century.

Although urbanization in the presently developed regions of the world took place gradually over a period of more than a century, Asian urbanization has been racing ahead at a breakneck pace since the end of World War II, without the slightest hint of any abatement in the foreseeable future. Asian urbanization also differs from the experience of the developed regions because of its sheer magnitude. Still another difference is that urban growth in Asia has been derived primarily from high fertility and declining mortality, in which the natural increase generally overrides rural–urban migration as a factor of population growth. Rural–urban migration contributes, nevertheless, to as much as two-fifths of the increase in urban populations. Most important of all, many students of Asian urbanization (McGee 1967; Dwyer 1972; Yeung 1976) have observed that Asian urbanization has been unfolding in a developmental context, without the structural changes and sociocultural concomitants that accompanied western urbanization. One of the more obvious features of Asian urbanization is the small relationship it bears to industrialization. Whereas in the developed regions urbanization and industrialization have gone hand in hand, in Asia urbanization has frequently continued to accelerate despite the lack of industrialization and attendant structural changes. One consequent characteristic of rapid Asian urbanization is widespread urban poverty and the enormous number of urban dwellers suffering from a severe lack of basic services.

One of the basic urban services with ample signs of shortage is that of shelter. The street dwellers of Calcutta, *bustees* of Bombay, shanties of Colombo, squatters of Manila and Bangkok, packed tenements of Hong Kong, and slums of Shanghai and Karachi all attest to the acute shortage of housing for their inhabitants. For decades, these low-income groups have been fighting a losing battle to improve their housing because their humble abodes have been judged to be below the accepted standards and, hence, not fit for habitation. At the same time, they are unable to afford the

cheapest form of public housing provided by the government. They remain outside the mainstream of housing programs, victims of housing policies that are supposedly designed to percolate to their levels. Yet, in many Asian cities, half of the population lives in these residential environments, which may be described by and large as slums and squatter settlements.

In a comparative sense, the disparity in housing standards between developed and developing countries is growing wider. Most Asian countries invest no more than 3% of their gross national product in housing, as opposed to 4% in developed countries. Translated into conventional statistics, most Asian countries construct an average of 2–3 dwelling units per thousand inhabitants per year, whereas developed countries construct about 7.5 units (UN Economic and Social Council 1973). These figures highlight the need to evolve indigenous solutions to housing the large number of poor people in Asia, as conventional methods of construction and meeting housing demands are unlikely to produce the needed remedies. Fortunately, a measure of success has been attained in many countries in housing the poor over the past 10 years.

A Decade of Progress

The 1970s may be considered to be the most important and successful period to date in Asia's effort to provide shelter for the populace. Significant progress in many respects has been achieved, resulting from sustained endeavours at national, regional, and international levels. It is instructive to review some of these endeavours, which have assumed a variety of forms with important implications.

At the national level, the 1970s witnessed three major policy trends in many Asian countries in housing provision for the poor. Firstly, after 25 years of typically ineffective policies directed toward the problems posed by squatter settlements during the postwar period, many governments adopted a conciliatory and accommodating approach toward all forms of spontaneous settlements. The marked softening of the earlier hard-line policy toward these forms of settlements was brought about in part by development and support at the international level.

Secondly, for the first time in some countries, housing was finally recognized not merely as social overheads in national development but rather as a productive sector in its own right and a means to achieve social and economic objectives. For example, the Indonesian government, which failed to provide a comprehensive housing policy in the First National Development Plan, Repelita I (1969–1974), included in the Second National Development Plan, Repelita II (1975–1979), much better provision for housing and municipal services as part of an overall strategy to improve income distribution. Similarly, housing provision was given increasing attention and support in successive Malaysia Plans. Consequently, completed dwelling units in the last decade increased steadily from 13 000 during the period 1971–1975 to about 40 000 during the period 1976–1980. In the Fourth Malaysia Plan (1981–1985), the target for urban public low-cost housing is set at 176 500 units (Yeh 1982).

Thirdly, although Singapore's Housing and Development Board was set

up in 1960, most Asian countries had, until the early 1970s, been plagued by the absence of unified housing agencies, the prevailing problem of overlapping responsibilities, and competition for scarce financial resources stemming from multiagency delivery of low-cost housing. During the last decade, Hong Kong was the first country to amalgamate (in 1972) several previously independent housing bodies into an integrated Housing Department. At the same time, the government outlined an ambitious plan to improve housing for 1.8 million people over the next 10 years at a cost of HK$3340 (US$607) million. Similar decisions were taken over the next 2 years in Thailand (1973), Indonesia (1974), and the Philippines (1974), whose governments established their own respective National Housing Authorities (NHAs) as a central and consolidated body to plan and implement low-cost housing. The case of the Philippines is complicated, however, because after the creation of a unified housing body the Ministry of Human Settlements (MHS) was established in 1978. The organization, planning, and delivery of low-cost housing, therefore, must be coordinated between NHA and MHS.

Among the Asian countries, Hong Kong and Singapore have been the most successful in meeting the housing needs of their populations. As the 1970s came to a close, Hong Kong had built 413 000 low-cost housing units, compared with 336 000 units in 1972. The overall housing situation showed a household to housing unit ratio of 1.25, and 45% of the total housing stock consisted of public housing (Yeh 1982). Almost one in two (45%) of the population lived in public flats. In an equally impressive manner, by 1980, after 20 years of uninterrupted efforts and four 5-year building programs, Singapore had completed 350 000 housing units, providing subsidized accommodation to approximately 70% of the population. Unlike the Hong Kong situation, a majority (62%) of the public flats in Singapore were owner occupied. Major treatises on the housing situation in the two city-states have been provided by Pryor (1973), Drakakis-Smith (1973, 1979), Wong (1978), Yeh and Statistics and Research Department (1972), Yeh (1975), Yeung (1973), and Hassan (1977), and comparative analyses of their planning experience and housing policies by Yeung and Drakakis-Smith (1974, 1982).

With respect to country situations, the recent partial opening of China to research, since 1976, is noteworthy. Because of the political and ideological circumstances shrouding China for most of the period since 1949, little was known of its housing situation or its housing policies. The last few years, however, have seen possibilities of limited and focused investigations, even by foreign scholars. For instance, Ma (1981) was able to survey and review the housing supply in Chinese cities and noted their peculiar housing problems. In China, there is an element of egalitarianism even in housing — gone are the worst slums and luxurious mansions of the past. Ma concluded that, despite the need for more and better housing, it would be unreasonable to expect the state to divert its limited financial resources to the cities for housing improvement when they are more urgently needed to accomplish the goals of a modernization program. On a different scale, Pao (1980) succeeded in completing an exploratory study of housing in Beijing. Based on a survey of 100 families, Pao observed that overcrowding was a serious problem, squatters were nonexistent, political factors loomed large in housing policy, and the people's participation in

housing development was minimal.

At the regional level, there has been a renewed awareness of the commonality of housing problems and, therefore, the considerable merit in sharing experiences. Research networks, conferences, seminars, and other fora have been important avenues along which regional activities have taken place. In terms of research, the IDRC-supported low-cost housing network of eight Asian countries, during the period 1972–1975, was most significant not only in galvanizing public interest on housing issues in each of the participating countries, but also in facilitating the process of learning from one another through actual exchange of information, data, and approaches. In virtually every country, a comprehensive housing study emanated from the project, six of which have since been published (Yeh 1975; NEDA 1974/75; Marga Institute 1976; Wong 1978; NHA 1978; Tan and Hamzah 1979). The comparative experience of the project has also been documented (Yeh and Laquian 1979).

Another regional low-cost housing project was organized by the former Technology and Development Institute, which later merged with the Resource Systems Institute of the East–West Center at the University of Hawaii. The network of Indonesia, Korea, the Philippines, Thailand, and the United States was created in 1973. Since October 1977, the coordination centre has been shifted to the Asian Institute of Technology in Bangkok. This is a cooperative, action-oriented project with a series of roving workshops and research, documentation, and training activities with greater emphasis on low-cost construction materials and design concepts. Goodman et al. (1979) have summarized the experience of this project to date.

Still another research project, in which five Asian countries formed part of a global as sment of 17 Third World nations, arose from the need to evaluate the work of both national governments and major aid agencies in light of the *Habitat Recommendations* that emanated from the 1976 United Nations Conference on Human Settlements held in Vancouver, Canada. The project, coordinated by the International Institute on Environment and Development, highlighted housing, land, and settlement policies in India, Indonesia, Nepal, the Philippines, and Singapore. These country studies are covered in part by Hardoy and Satterthwaite (1981) and more extensively in three volumes entitled *Habitat Asia*, under the general editorship of R.P. Misra (1979).

Regional housing meetings focused on some themes of general relevance and wide recurrence have been held with increasing regularity. In this respect, the work of the Human Settlements Division of the Asian Institute of Technology (AIT) has been outstanding. During the past few years, at least three major conferences have been organized, addressing important issues such as low-income housing technology and policy, people's participation, and land in housing the poor. Separate publications on these respective issues, by Pama et al. (1977), Swan (1979), and Angel et al. (1983), were a direct outcome of the above meetings and served to disseminate the results to a much wider audience. Other important housing meetings have been held in other parts of Asia as far separated as Korea and the Middle East. Publications arising from these meetings have also become available (USAID 1976; Dakhil et al. 1978).

The theme of the people's participation in low-cost housing provision, in

relation to AIT housing meetings, warrants special attention. Although this approach to housing construction has been in vogue in Latin America since the 1960s, through the persistent and inspiring efforts of John Turner and others, it was only in its incipient stages even in the 1970s in Asia. The experience of housing landless labourers in villages outside Ahmedabad, earthquake victims after the 1976 disaster in Bali, and evicted squatters in Bogum Jahri, Korea, has fully demonstrated the real worth of mutual aid and community participation in providing shelter. Likewise, the Building Together project in Bangkok is an outstanding example of how mutual aid was harnessed to build a low-income community. This example is reported on briefly in chapter 5, and in greater detail in Swan (1979, pp. 147–183) and Angel and Phoativongsacharn (1981). Voluntary agencies have been playing a catalytic role in organizing most of these efforts. In India, these can range from the "one-man institution" of Laurie Baker in Trivandrum to a more formal setup like the Ahmedabad Study Action Group (Achwal 1979). Keyes and Burcroff (1976) also described similar approaches in the Philippines. In the approach to housing the poor based on efforts of the popular sector in Asia, the work of Shlomo Angel, Kirtee Shah, and Father Jorge Anzorena may be considered pioneering.

Finally, at the international level, following the pace-setting Presidential address at the World Bank by Robert McNamara in 1972, many in the donor community have been more forthcoming with assistance to shelter programs in Asian countries in the 1970s. For example, the United States Agency for International Development (USAID) set up its Housing Guarantee Loans Program to provide housing finance; the Institute of Housing Studies (previously the Bouwcentrum International Education) and the Canadian International Development Agency (CIDA) have been active in supporting training for housing administrators; the Asian Development Bank (ADB) assisted in shelter projects through its newly established Urban Development Section under the Infrastructure Department; the United Nations Children's Fund (UNICEF) continued its work toward better services and opportunities in slums and squatter communities, particularly for women and children; and the United Nations Environment Programme (UNEP) funded projects such as that in two marginal settlements in Manila (Barrio Escopa) and Jakarta designed to explore the possibilities of utilizing alternative (solar) energies to improve living conditions for the inhabitants.

However, the most far-reaching, in both numbers of people affected and global impact, have been the shelter assistance programs launched by the World Bank since 1975. By 1982, 90 projects involved in sites-and-services and community upgrading were in different stages of implementation in 50 Third World nations, many of which are in Asia. Three principal characteristics may be associated with these projects (Churchill 1980). First, the projects go with a package of services, such as the coordination of land tenure, public services, private investment, and improvement of employment opportunities. The second is an important policy guideline to emphasize cost recovery, thereby enhancing the likelihood of replicability of the projects on a worldwide basis. The third feature is to broaden the concept of shelter provision in relation to development in investment planning and implementation capacities of cities and regions in which the programs are carried out.

The fundamental conceptual underpinning for the World Bank shelter assistance programs is the notion of progressive development, whereby housing improvement of low-income groups can be effected through a large measure of self-help and community participation. By avoiding high standards in sites-and-services projects and encouragement of community participation in slum-upgrading projects, limited funds have been extended to benefit large segments of the population. In fact, it has been found that income has not been a constraint, for such projects have been able to reach almost all low-income groups except those in the lowest 5–10% of the income distribution. So far, evaluations of these projects, from the standpoints of housing stock, access to services, impacts on the socioeconomic conditions of participants, and the influence on urban housing policies, have been favourable. Keare has provided some of the results of such an evaluation in chapter 9 and more extensively elsewhere (Keare and Parris 1982; also PADCO 1981). Since 1975, the World Bank has provided US$1.3 billion for shelter programs that are estimated to have benefited more than 10 million people; indeed, only a fraction of the 800 million individuals believed to be mired in absolute poverty (Churchill 1980, p. 36).

When the shelter programs at the World Bank were first launched in 1975, it immediately dawned on officials at the World Bank and IDRC that the success and failure of individual projects needed to be carefully monitored and evaluated in order that subsequent development efforts could be more efficiently mounted. For this reason, the World Bank and IDRC jointly provided support from 1975–1980 to a collaborative research project of World Bank-assisted shelter programs in four countries, namely El Salvador, Zambia, Senegal, and the Philippines. In a companion volume to this one, Laquian (1983) has coined the term "basic housing" to document the major policy issues of this 5-year project (see also IDRC 1982). Laquian has argued that basic housing has emerged as the most important policy intervention in assisting the urban poor in developing countries, in that the emphasis is placed on the process of service and shelter provision rather than on the physical house shell. Curiously, the ideas of mutual aid, self-help, community action, core housing, and progressive development, derived from the actual practices of squatters and slums and held so much in suspect in the previous decades, suddenly became the main ingredients of a basic housing policy in the 1970s. The full impact of this approach to housing the poor is yet to be determined as more shelter projects are being developed with World Bank and other donor agency assistance in Asia as well as in other regions of the developing world.

To conclude this section about the achievements of the 1970s, it should be mentioned that publications dealing with low-cost housing in the Third World have appeared with increasing regularity. Worthy of note are the classic study of Tondo in Manila by Laquian (1971) and a philosophy of housing by Turner and Fichter (1972). Drakakis-Smith and Fisher (1975) provided an analysis of the little known housing problems in Ankara, particularly the *gecekondu* phenomenon, and Dwyer (1975) synthesized the salient findings about spontaneous settlements in Third World cities. The World Bank (1974, 1975) produced a sector policy paper on housing and another on sites-and-services projects, both of which drew much attention to the deteriorating housing situation in developing countries

and the urgent need for international assistance. Comparative housing statistics on a worldwide basis became available, for the first time, with the publication of the *World Housing Survey* (UN Economic and Social Council 1973). Unfortunately, the updated edition, supposedly to appear 5 years after the first edition, has not yet been published. Ward's *The Home of Man* (1976) and Turner's *Housing by People* (1976) were both written as indirect contributions to the 1976 Vancouver Habitat Conference to enhance interest in human settlement problems in the Third World. Since 1976, many more publications related to the theme of housing the poor in Asia have appeared, including many that have been cited previously. Others deal with specific Asian countries (Harré and Knapman 1977; Wegelin 1978; Stretton 1979), urban housing (Grimes 1976; Payne 1977; Shankland Cox Partnership 1981), spontaneous settlements (Robinson 1976; UNCHS 1982), housing finance (Jorgensen 1977; Pratt 1977), human settlement issues (Bell 1976; Oberlander 1977), housing policies (UN Department of Economic and Social Affairs 1976; Murison and Lea 1979), bibliographic surveys (Mackenzie and Kerst 1977; USAID 1978), and Third World housing in general (Drakakis-Smith 1981; UNCHS 1981). In passing, it should be mentioned that the United Nations Centre for Human Settlements (UNCHS) was one of the more concrete outcomes of the 1976 Vancouver Habitat Conference, replacing the previous Centre for Housing, Building and Planning of the United Nations. With its headquarters in Nairobi, it is represented in Asia by Vision Habitat in Bangkok, and organizes training, publication, and research activities related to a wide range of human settlement issues.

Themes and Organization

The papers in this volume are organized according to certain themes, which reflect the programs for low-cost housing provision prevailing in the countries under review. Six countries are represented, each with two papers. They are: Singapore, Malaysia, Thailand, the Philippines, Indonesia, and Hong Kong. As the first five countries are members of the Association of Southeast Asian Nations (ASEAN), the programs and policies addressed are more indicative of the situation in Southeast Asia than in other parts of the continent.

The six countries may be grouped on the basis of their approach to the housing problem and the scale of planning. Singapore and Hong Kong are a class in themselves because, by necessity rather than choice, they have adopted similar programs of public housing, with their characteristics of high-rise, high-density development. For a variety of reasons that have been elaborated upon elsewhere (Yeung and Drakakis-Smith 1974, 1982), these programs have succeeded in providing reasonably decent housing to a large cross section of the population. Large-scale development typifies these planning efforts and, more true of the past and present decade than earlier achievements, public housing is well integrated with the design of new towns that have taken shape at increasing distances from the central-city area. On the other hand, the other four countries have been experimenting with approaches ranging from conventional housing construction of varying heights and slum upgrading to sites and services.

Given the cultural diversity of these countries, different housing programs befitting their societal contexts have evolved.

The first two chapters show how, largely through trial and error, a new-town model has been perfected in Singapore's public-housing programs. To a large extent, affordable and popular low-cost housing in large supply has been feasible through the development of a series of new towns. By the early 1980s, new towns such as Bukit Ho Swee, Queenstown, Toa Payoh, Ang Mo Kio, and Bedok were completed, and several others were being developed. Increasingly, the tendency has been to upgrade the quality of housing after immediate demands have been satisfied for some time. The first chapter focuses on four dimensions in the planning of these new towns: building design, planning, environmental design, and community organization. With respect to the environmental design, it should be highlighted that recent planning practices have emphasized, in particular, the development of precincts, as an extension of the neighbourhood principle, which has been the cornerstone for much of the post-1960 programs. The new emphasis on precincts, such as the introduction of precinct squares, was an attempt to enhance the human scale in the new towns, yet remain within the effective bounds of community development. A typical new town has a population of 200 000 and is hierarchically structured for design and planning purposes.

On a scale of development such as Singapore's, one persistent problem has been the difficulty of promoting social integration among residents on different floors and a sense of communal identity. With public housing encompassing an ever-increasing proportion of Singapore's population, new problems have surfaced. Some of these include migration of residents from older to new estates, breaking up of extended families, the ageing of the population, and the need to exchange flats for family reasons. Management of the new towns has become more complex and challenging. To meet this challenge, the new management practice is to improve the welfare and quality of life in the new towns. A social transformation is said to be in progress, with encouragement of resident participation in activities of many kinds and inculcation of greater social awareness. The ultimate objective is to create planned communities that are socially integrated with equal access to housing and associated amenities.

In a review of public sector involvement in low-cost housing provision in Malaysia, chapter 3 underlines the problem of multiplicity of housing agencies, which leads to needless delays and an ineffective delivery system. For example, 60 public agencies are responsible for implementing housing programs of one form or another within the country. In the Kuala Lumpur area, it is alleged that bureaucratic procedures are so cumbersome that one may have to go through 40 stages to get a housing project approved. One direct manifestation of the scarcity of low-cost housing is the large number of squatters in the Federal Territory. In 1971, approximately 37% of the population lived in slums and squatter settlements. However, the government has shown a serious commitment to improving the housing situation by tripling financial allocations to public housing from the Second to the Third Malaysia Plan. It has been working toward a progressive housing strategy. In the current Fourth Malaysia Plan (1981–1985), M$1000 (US$454) million has been allocated for public housing programs to construct 266 000 dwelling units. Whether or not the

public sector has the capacity to meet the target is an open question, as Yeh (1982) has argued that the basic institutional impediments to a smooth delivery system are still present. Some of these impediments include the lack of a coherent land policy, insufficient housing financing, and the absence of a long-term policy toward slums and squatter communities. The review of public sector involvement and some of the negative implications derived therefrom raises the related question of whether or not more can be accomplished by the private sector. In this respect, Drakakis-Smith (1981; also Tan and Hamzah 1979) shows that in Malaysia the private sector has been playing an active role in meeting some of the housing needs of the poor; but perhaps more can be achieved by private developers, for the public sector policies are yet to be fully rationalized.

Implicitly, chapter 4 sets the stage for a debate on the pros and cons of high-, medium-, and low-rise housing for the poor. This debate still continues in Southeast Asia (Yeung 1977), although high-rise, high-density living has been well accepted in Hong Kong, Singapore, and large cities in Korea, Japan, and Taiwan. On the basis of 10 case studies in Malaysian cities, this chapter presents an exploratory attempt to assess alternative approaches to low-cost housing in Peninsular Malaysia by adjusting cost and density factors. Three types of low-cost housing have been identified: high-rise, high-density; medium-rise, medium-density; and low-rise, medium-density. A number of indices have been developed to evaluate these forms of low-cost housing from the perspectives of housing design, quality of the physical environment, and cost per unit. The three types of housing have uneven scores with respect to the three variables. When all scores are combined, it is concluded that the low-rise, medium-density approach is the most culturally and socially compatible with the way of life of the low-income population. The cluster-link design of this approach appears to be especially appealing to the residents.

Chapter 5 examines housing policies, programs, and recent innovations in low-cost housing delivery in Thailand in relation to population growth and urbanization. Housing demand and supply are analyzed, along with an evaluation of housing quality. From the viewpoint of program effectiveness, the most important finding is related to the process by which the present housing policy, under the National Housing Authority (NHA), has evolved. Because of low-cost housing set at too high a standard, four separate housing agencies managed to construct only 1700 dwelling units during the period from 1950–1973. Even during the early years following the creation of NHA in 1973, the problem of excessive subsidy and limited technical and administrative capacity prevented NHA from seeking solutions to house the poor in an effective manner. It soon became apparent that minimal subsidy and maximum community participation were the keys to improving shelter conditions for the masses. To follow this newfound policy, NHA proposes, in the Fifth National Plan (1982–1986), to construct 10 000 new housing units per year and to upgrade 30 000 units in existing slums simultaneously. The World Bank has already provided valuable assistance to slum-upgrading programs. To complement these efforts by the public sector, there have been promising innovations by the people themselves to build their own houses. The Building Together project is briefly reported on, but more detailed descriptions of this experiment have been mentioned before.

With chapter 5 setting the background upon which housing policies have been developed, chapter 6 focuses on the problem of slums in Bangkok — their formation, environmental problems, improvement programs, and land-acquisition difficulties. It also provides an in-depth description of the ramifications of a World Bank-funded slum-upgrading project in a well-established area in central Bangkok — King Petch. The project improves not only the physical environment but also the socioeconomic conditions and community organizations of the inhabitants. Overall, the experience in King Petch mirrors a process that has been in progress in many other slum areas in Bangkok. By varying degrees, the program is being extended to other cities in Thailand and, in concert with other concurrent efforts, has been able to reach more of the poor whose housing conditions are in great need of improvement.

In parallel with Thailand's slum-upgrading programs, the Philippines has pursued improvement of substandard and underserviced residential neighbourhoods through what is called the Zonal Improvement Program (ZIP), under the administration of the National Housing Authority (NHA). The program seeks to improve the environmental, employment, and general living conditions of an estimated 2 million individuals from low-income families in the Metro Manila area over a period of 10–15 years. In a way, ZIP is a nonconventional approach to housing the poor inasmuch as it is designed to go beyond mere housing to improvement of the total environment, even employment.

Chapter 7 highlights the difficulties involved in implementing ZIP, such as the lack of interagency coordination, inherent weaknesses of local governments, lengthy project cycles, increasing project costs, and the danger of a politicized program. It is argued that some of these difficulties may be overcome by developing the capacity of local governments to implement slum-improvement programs. This can be achieved by building up the technical staff, encouragement of more active community participation, and strengthening the livelihood component of the program. Policy guidelines for more effective local government participation in slum improvement are also suggested.

Another Philippine approach to low-cost housing provision is the Bagong Lipunan Sites and Services Program (BLISS), under the responsibility of the Ministry of Human Settlements. By 1980, a total of 448 projects had been planned for the 12 regions of the Philippines. Like other sites-and-services projects in other countries, BLISS entails serviced plots and development in areas that have not been utilized for residential purposes before.

Chapter 8 reports on the rural experience of BLISS, which involved organizational development, site development, service delivery, shelter provision, and livelihood development. The catalyst for much of the social, political, and economic growth of the community is provided by the Bagong Lipunan Community Association (BLCA). Such communities are seen to perform many functions, such as technology outposts, growth points for the surrounding areas, documentation centres, and production and marketing nodes. With the large number of such projects being planned within the country, the impact they will have on shaping human settlements will likely be significant.

To maximize the strengths of and lessons from early project experiences

for the benefit of subsequent development, projects such as those described above must be assessed systematically. Indeed, chapter 9 presents the results of an assessment of the impact of projects supported by the World Bank in the Philippines and Indonesia as of the late 1970s. Incidental references are made to similar projects in Zambia and El Salvador as the results were drawn from a larger evaluation study that IDRC also supported, as referred to previously. Additional data and perspectives on this study may be found in Keare and Parris (1982), IDRC (1982), and Laquian (1983). Within chapter 9, project impacts have been evaluated along the themes of the achievement of the physical objectives, affordability and accessibility, improvement to housing, access to services, employment and income generation, and broader impacts on urban housing. The results of the assessment are, for the most part, positive. It suffices to say that World Bank-assisted shelter projects have been effective in reaching the target population. They have had no difficulty in reaching families down to the 20th percentile of the income distribution. Comparing sites-and-services and slum-upgrading projects, however, it was found that the latter had benefited a higher percentage of the low-income households. Upgrading appears to be a superior approach in addressing the housing needs of the urban poor. The initial success of these programs has led the governments to extend the approach to other parts of Indonesia and the Philippines from the major metropolitan areas where the experimental programs were first tested. It has also convinced the World Bank to integrate housing programs with related assistance efforts in improving urban utilities and fiscal ability.

Chapter 10 addresses yet another residential neighbourhood improvement program in Indonesia. Called the Kampung Improvement Program (KIP), it is not unlike the upgrading programs described earlier in Thailand and the Philippines. Perhaps a notable difference is that KIP has been practiced in Indonesia for many years on an informal basis but has recently been receiving considerable attention and financial assistance from international agencies such as the World Bank, ADB, UNEP, and UNICEF. Correspondingly, the government has devoted greater resources and energy to improving housing and living conditions in the countless kampungs around the country. In the Third National Development Plan, Repelita III (1980–1984), for example, the government will assist some 200 cities in Indonesia by improving housing and general conditions in 15 000 ha of kampungs. Similar to the programs in Thailand and the Philippines, KIP improves physical conditions in the concerned neighbourhoods, coupled with an uplift of the quality of life and economic opportunities. So far, experience suggests that physical improvement projects have been more successful than plans for social and economic development. Reminiscent of the situation in ZIP in the Philippines, any progress in the Indonesian program depends critically upon the coordination among public agencies at the national and local government levels. Kampungs are selected according to a set of criteria. Finally, community participation is encouraged and emphasized at every stage of the program so that the inhabitants can claim credit for partial contribution to whatever improvement has been effected.

The last two chapters return to the theme upon which the present volume began, i.e., how, within severe constraints of land and population

pressure, a city-state has succeeded in meeting the housing needs of large segments of low-income households, and the use of new towns as a major form of development. Chapter 11 describes the process of formulating long-term development strategies in Hong Kong and outlines clearly the stages by which policies and targets are set. In planning and programing for developments in the new towns, the notion of progressive implementation is employed. Packages of detailed implementation programs are assembled for the production and development of land. Issues related to land — acquisition, clearance, and formation — have been given special attention. They show that land constitutes one of the most important factors that either constrains or facilitates housing or any other development. It is also shown that, in Hong Kong's massive public housing programs, standardized planning parameters and a sound monitoring system are equally important for the production and maintenance of the huge number of dwelling units.

With more and more new towns being developed at increasing distances from Hong Kong's metropolitan area, chapter 12 describes a management structure for the new towns that have been built since 1972. Structurally, estate management for the new towns entails the division of the New Territories into districts, each of which is under the direct supervision of a senior housing manager. On the estate, a housing manager is present to provide better service to the residents and problems are dealt with on the spot. This decentralized system has facilitated the link between the new towns and the headquarters of the Housing Department. Moreover, it has permitted the Housing Department to assess residents' reactions to important policy issues. Within the new towns, estate management has adopted several marked innovations. For instance, a new system of rental tendering has been in effect, granting no concessional rents to commercial operators and ensuring a comprehensive range of shops for the benefit of shoppers and tenants alike. There has been a tendency to attract a greater mix of tenants as more applicants from higher-income groups have shown greater interest in living in the new towns. Also, since 1977 there has been special provision for housing for the elderly, with the ancillary services that this group particularly requires. All in all, the emphasis on a system of comprehensive housing management is very similar to the situation in Singapore in which new town development has likewise called for a responsive management style in the face of the ever-changing needs in these communities.

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New Towns in Singapore

Liu Thai-Ker, Lau Woh Cheong, and Loh Choon Tong

The year 1981 marked the 21st anniversary of the Housing and Development Board (HDB). In the period 1960 to 1965, small residential estates were built around the urban fringe; comprehensive development of new towns began in the mid-1960s. Over the last 15 years the basic structural concept of new towns in Singapore has taken a very definite and distinct shape. The solutions seem to be successful insofar as they provide a high level of satisfaction for the residents and contribute toward the upgrading of physical living conditions in Singapore.

The new-town development can be seen as an experiment in an urban laboratory unique in the world today in that, by and large, planners are able to realize their principles and idealism with relatively less practical constraints than those in many other metropolises. It is an urban laboratory because people are housed on a massive scale in a high-rise, high-density environment.

This paper reviews four conceptual dimensions of new towns in Singapore: building design, planning, environmental design, and community organization. The new towns are described in the context of public-housing development in Singapore, followed by a brief review of the new-town development and an elaboration on the four dimensions. References are made to implementation and development strategies.

Public-Housing Development in Singapore

Public-housing development in Singapore is presented in terms of the major constraints and assets, the key achievements, the physical manifestations, and the rudiments of new-town concepts.

The key constraints are the shortage of land relative to the population. With an area of 620 km^2 and a population of 2.43 million in 1980, Singapore is comparatively small for a major metropolis and, indeed, very small for a country. In a country, land is required for a great variety of essential needs such as housing; water catchment; industrial, recreational, and agricultural uses; and so on. The density of 3907 persons/km^2 may appear slightly low, compared with those of other ASEAN capitals, such as Jakarta and Manila, not to mention another close neighbour, Hong Kong. However, it is very high compared with the ASEAN's countrywide densities (Table 1). That leaves little choice but to resort to high-rise, high-density development.

The major asset is the strong government support. This support comes in

Table 1. Population density of ASEAN countries and Hong Kong.

Countries (capitals)	Population density (persons/km^2)	
	Countrywide	Capital city
Indonesia (Jakarta)[a]	77	5000
Malaysia (Kuala Lumpur)[a]	41	3844
Philippines (Manila)[a]	140	7814
Singapore[b]	3907	3907
Thailand (Bangkok)[a]	85	3213
Hong Kong[c]	4729	4729

Sources: [a]1981 March, official figures obtained from local embassies.
[b]Yearbook of Statistics 1980/81, Chief Statistician, Department of Statistics, Singapore.
[c]Hong Kong 1980, Census and Statistics Department, Hong Kong.

Table 2. GNP and GNP/capita in Singapore, 1960, 1970, and 1980.

Year	GNP (S$ million)	GNP/capita (S$)
1960	2189	1330
1970	5861	2825
1980	22 217	9293

Source: Yearbook of Statistics, 1967, 1980/81, Chief Statistician, Department of Statistics, Singapore.

two significant ways. First, high priority is placed on public-housing development, as reflected in the government's annual budget allocations. For example, from 1977 to 1979 the government loan for public-housing expenditure represented about a third of the capital estimates for Singapore. Secondly, the Compulsory Land Acquisition Act confers on the government and statutory boards serving as its agents, uncontested rights to acquire and assemble lands. Direct government assistance is further aided by the rapid improvement in the economy of Singapore as reflected in the substantial rise in the GNP (Table 2).

These factors have not only made possible the continuous introduction of better quality flats but also have ensured that sufficient funds are available for the various desirable facilities in new towns. Consequently, the community has progressed from the humble beginning of providing basic shelter to the present stage of providing relatively decent flats in a planned environment that, hopefully, can meet the aspirations and needs of the people for a long time.

These achievements are clearly dependent on major assets that have helped movement so far, and so fast, along the path of public-housing development. The last 20 years saw the passage of four 5-year building programs, during which about 350 000 flats were built, with an annual peak of over 30 000 units in 1977. These units house 70% of the population of Singapore, and the housing estates and new towns are spread in all directions from the city centre. As a result of actively encouraging home ownership, 62% of the HDB residents are now homeowners.

Public housing in Singapore caters not only to new applicants but also to the slum dwellers and squatters affected by clearance. Of the 350 000 flats, about one-quarter have been used to house the resettlement cases. It is only through resettlement that new unencumbered land can be created for the development of government projects.

The 350 000 units are made up of five prototype flats, namely the one-, two-, three-, four-, and five-room flats, with floor areas ranging from 33 to

135 m^2. Also, the HDB is beginning to build executive apartments of 145 m^2 in floor area. A new town is made up of a mixture of all these prototypes (Figures 1 and 2), and each totals between 25 000 and 50 000 dwelling units, housing 125 000 to 250 000 people. Besides residential usage, other major land users in new towns are factories, schools, open spaces, sports complexes, and institutions.

Each new town is subdivided into neighbourhoods of between 4000 and 6000 dwelling units housing 20 000 to 30 000 people (Figures 3, 4, and 5). The neighbourhoods are further subdivided into precincts, each comprising 500 to 1000 units housing between 2500 and 5000 people. In each new town there is a town centre, normally located in its geographic centre, and in each neighbourhood, there is a neighbourhood centre, usually within walking distance of 3 to 5 min for most residents.

The new towns built since the early 1970s are meant to be self-contained. Theoretically, the household head can work, the housewife can shop, and the children can be educated to the preuniversity level within a new town. They can also seek entertainment, sports, and other recreational pursuits

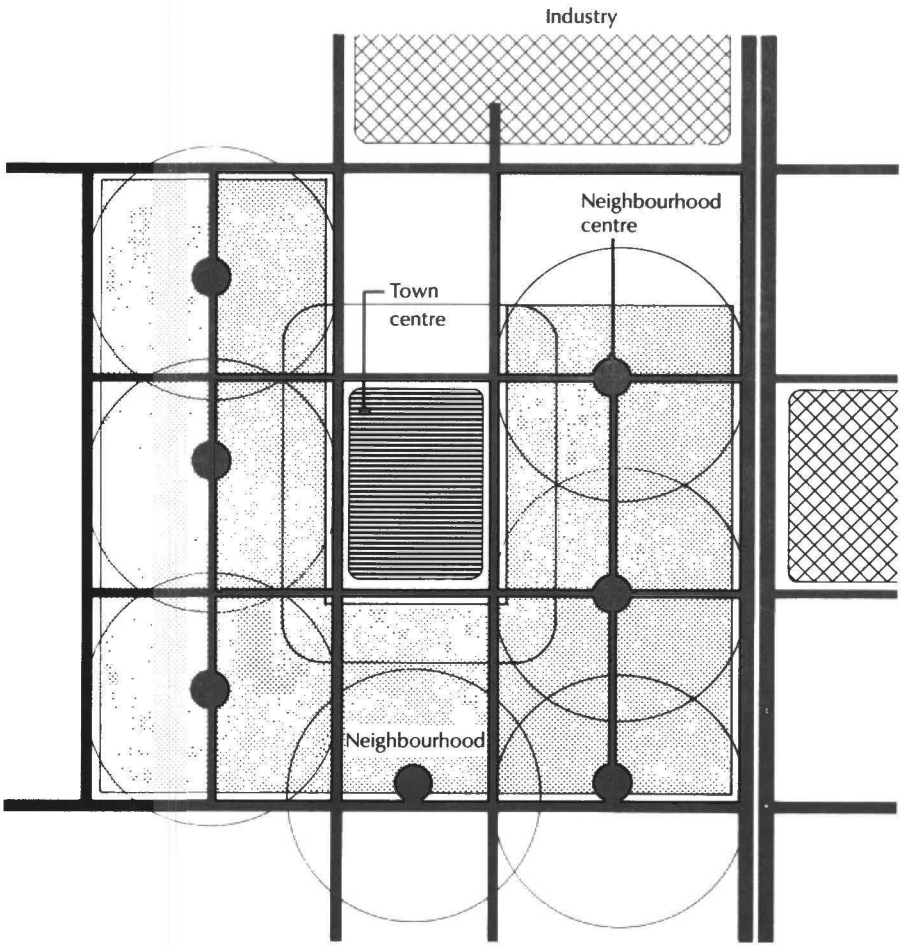


Fig. 1. Diagram of a new town.

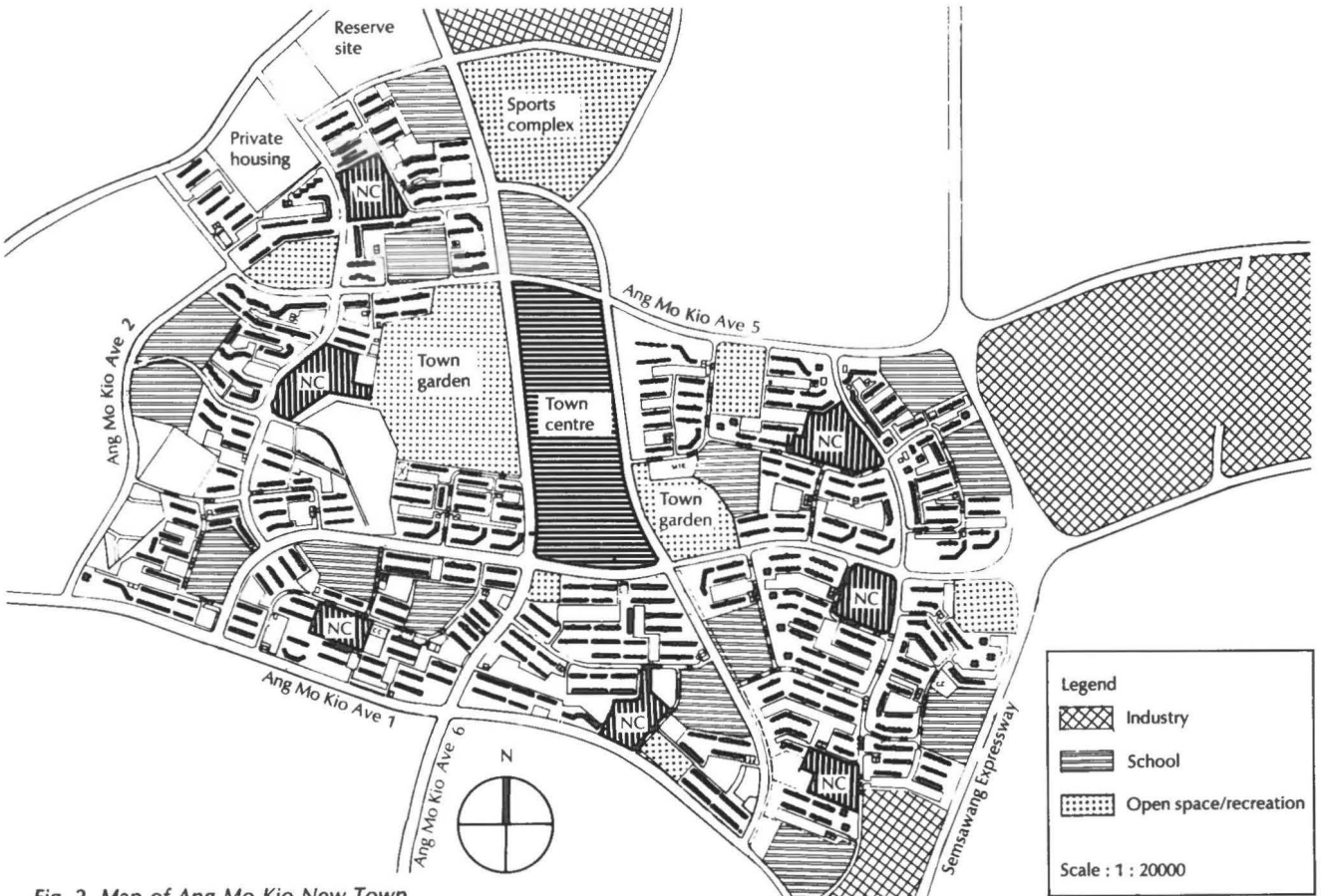


Fig. 2. Map of Ang Mo Kio New Town.

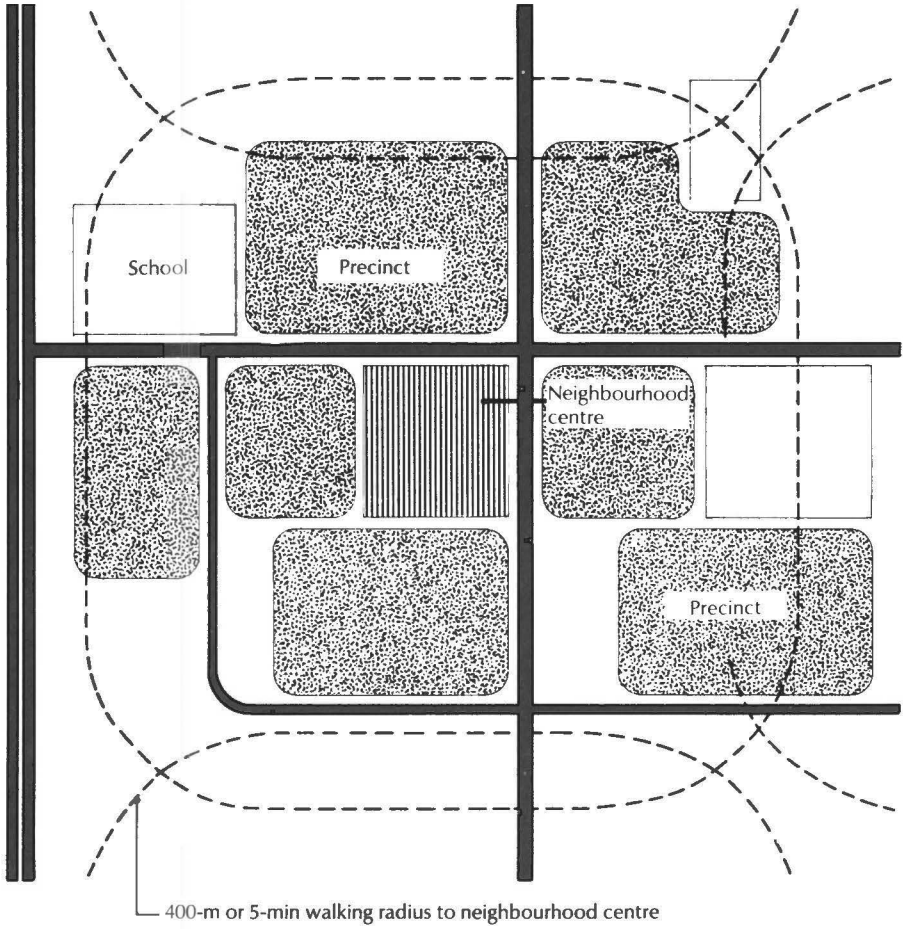


Fig. 3. Neighbourhood diagram.

within the new town. There are only two major exceptions. First, there are relatively few opportunities for office employment, and secondly, certain activities that require the support of a large user population, such as cultural centres and the national sports stadium, must remain the responsibility of the city as a whole.

Review of New-Town Developments

Planning concepts and criteria for new towns and housing estates have changed in relation to changing circumstances. The conceptual evolution of the planning process is summarized in Figure 6. Through these changes, the environmental quality of some of the key housing projects, such as the Bukit Ho Swee, Queenstown, Toa Payoh, Ang Mo Kio, and Bedok, reflects a progression of continuous improvements.

In 1960, there were only 22 000 public housing units, at which time, of a population of 1.63 million, about 15% of the people lived in the urban

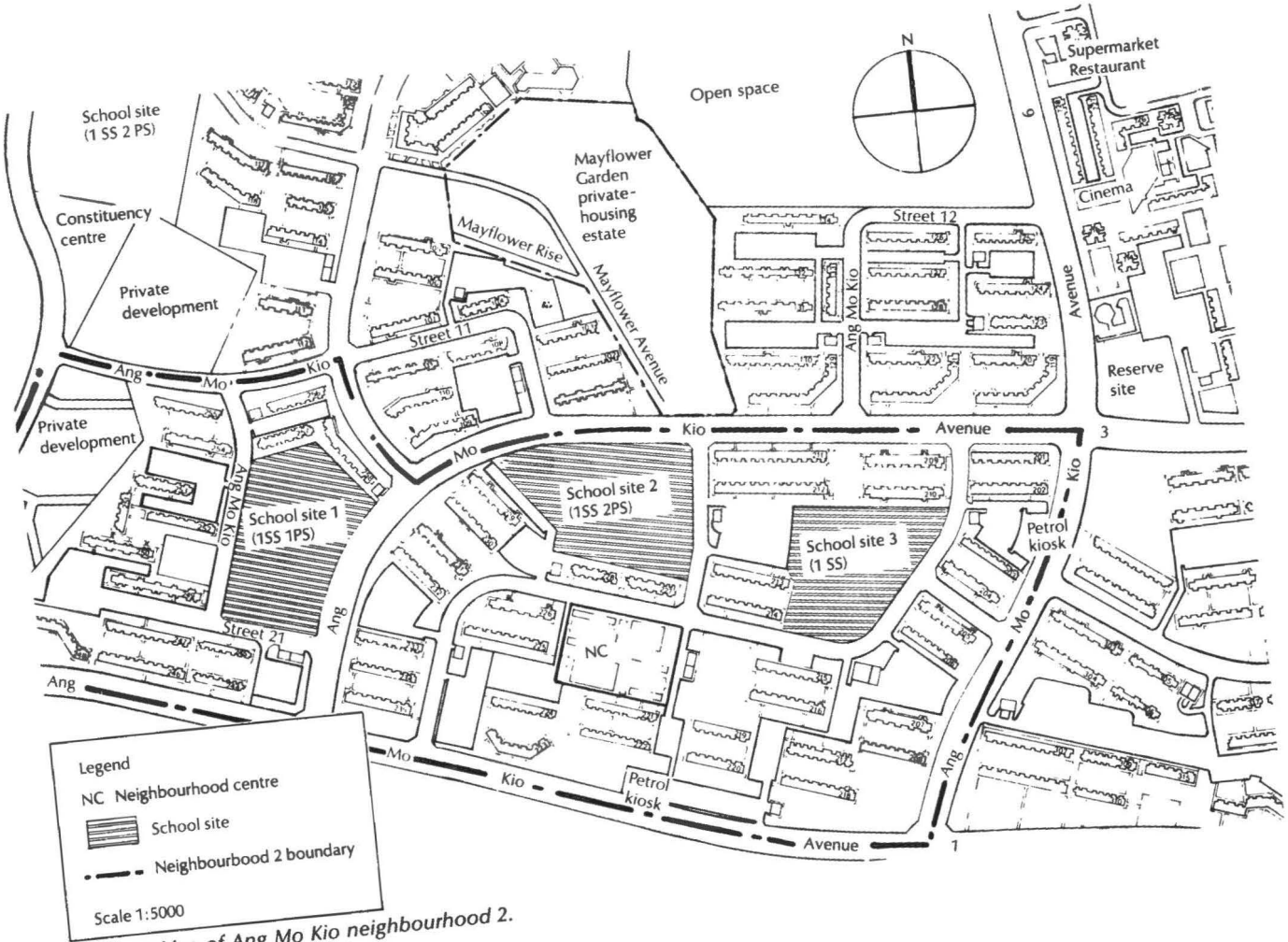


Fig. 4. Map of Ang Mo Kio neighbourhood 2.

Fig. 5. Aerial view of Ang Mo Kio neighbourhood 2.

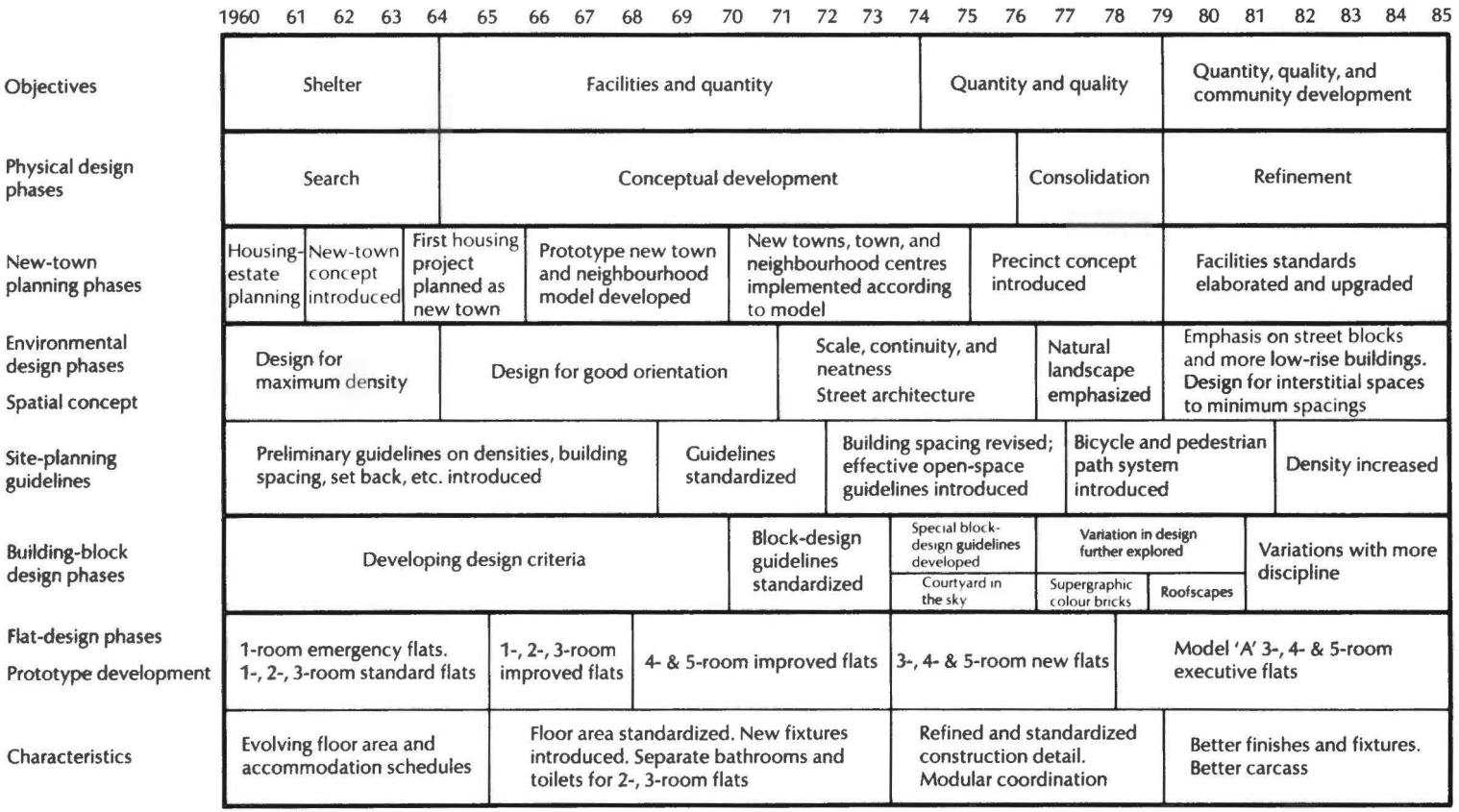


Fig. 6. Conceptual evolution of physical design.

slums and another 20% in the squatter areas. These squatter areas around the urban fringe represented some of the most squalid human habitats in Singapore. With Singapore being a newly independent country, and trying to industrialize but with no certainty of the future, the emphasis of the housing policy then was to provide affordable flats to those people most in need of shelter. These flats were to be built to the maximum density permissible by practical constraints, on the limited supply of cleared land.

There seems to be no shortcut to solving housing problems except to tackle the most urgent problems one step at a time. Looking back at the last two decades, the HDB has had to be realistic and to start from the simple, crude, and economic design rather than to begin by doing all the "right things" prescribed in textbooks. Through pragmatism, the HDB has, in fact, evolved a planning and design model that inadvertently turns out to be much closer to the textbook prescriptions than would otherwise have been possible.

From the outset, the HDB decided to look for a housing solution entirely Singapore's own with which to solve the problems effectively, and went through different stages of searching, early development, and consolidation. It is hoped that in the next 5 years refinements will be realized and that more closely working relationships may be forged with other governmental departments and agencies to look into the beginning of organized community development. Going through the planning and development of the new towns of Queenstown, Toa Payoh, Ang Mo Kio, and Bedok allowed the crystallization of the new-town planning model and evolution of guidelines and planning standards. One notable sign in this evolution is that, whereas in Queenstown 48% of the total land was used for residential development, in the later Ang Mo Kio only 41% was used. Industrial and other new-town-related facilities took up a significant 60%. Thus, the new towns in Singapore have become increasingly self-contained.

In terms of environmental design and design of building blocks, there has been evidence of gradual tightening of design disciplines, consciousness on quality, and emphasis on more meaningful use of communal space at different hierarchical levels starting from the courtyards-in-the-air to different precinct squares, plazas, neighbourhood parks, town gardens, and regional parks.

On flat design, there have been gradual increases of the size and facilities of the flats. Various generations of flat design have been passed from standard, through improved and new generation, to, most recently, model A. Whereas the smallest one-room flats are still maintained, the tendency is to build larger flats. The various finishes and appointment of the flats have slowly been improved over the years. Among the range of flats it seems that, for long-term use, four-room flats may be the mainstay of HDB's housing stock in Singapore. The four-room flat consisting of one living room and three bedrooms will be sufficient for the sleeping space for the parents in the master bedroom and the male and female children in the other two bedrooms or, alternatively, to have one for the children and the other for the grandparents, thus maintaining a three-generation extended family. In a flat with fewer bedrooms, the space would not be able to serve such a family purpose.

At present, the HDB is in a better position to try to meet housing demands both quantitatively and qualitatively. Besides providing shelters,

the HDB also tries to upgrade the housing stock and the housing environment. This shift of concern for quality is, in part, spurred by the continuous increase in the economic well-being of Singaporeans. The improvements in quality, combined with the gradual relaxations of eligibility rules, lead to a situation in which the HDB caters to an increasingly large number of people. In fact, at the current income ceiling, about 95% of the households in Singapore fall within the limit of eligibility for public flats.

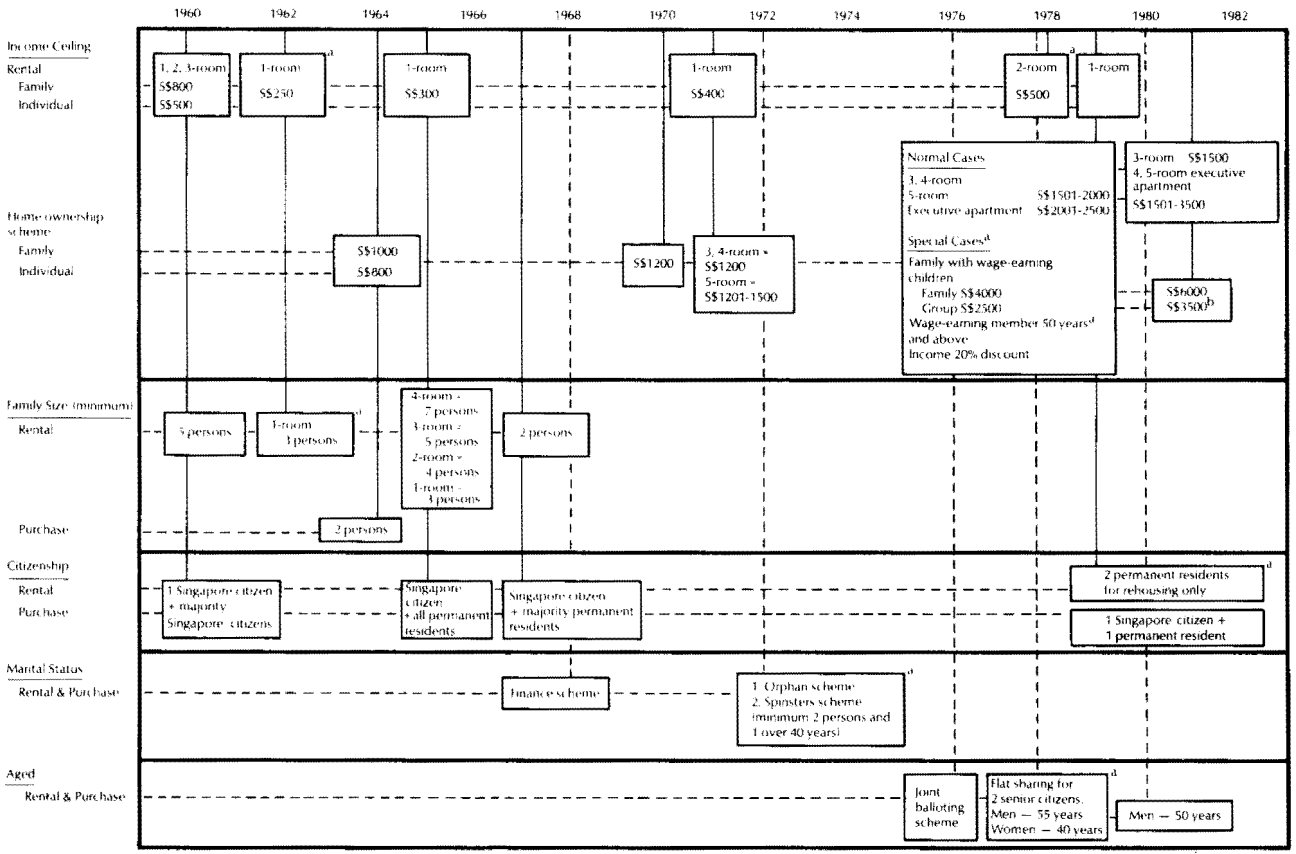
The eligibility rules have changed over time for, originally, they accorded priority to people with lower incomes and larger families (Figure 7). The minimum family size was five persons. However, as the housing shortage was gradually overcome, the need was recognized to provide housing to other groups of people who otherwise could not afford the much more expensive private housing. This resulted in the gradual reduction of the family size requirement from five to two, and even the citizenship requirement has been relaxed over the years. Furthermore, as the population ages, new rules have been introduced to meet the housing needs of the aged, both married and single. For example, to encourage parents and children to ballot for a housing unit jointly and to continue to live as one family, the eligibility income ceiling for such families was raised from S$2500 (US$1250) for normal families to S$4000 (US$2000) per month in 1980, and again to S$3500 (US$1750) and S$6000 (US$3000), respectively, in 1981.

This brief review underlines the philosophy of Singapore's housing policy, which may be characterized as one emphasizing learning by experience and building by using whatever resources are available at the moment. This philosophy entails a price as well as a reward. The price is that the HDB is burdened with a large number of emergency flats that are no longer considered suitable for long-term family living. Of the 17 000 one-room emergency flats, nearly three-quarters are being demolished to make way for larger and more modern flats. Of the 69 000 one-room modern flats there is a constant vacancy rate of 3 to 4%. Fortunately, these one-room flats were extremely useful to meet emergency needs of one kind or another. The reward is that, with a creditable record, the HDB begins to reap the fruits of its progress by providing better-designed flats and new towns for the majority of Singaporeans.

Four Dimensions of a New Town

This section outlines the essential planning and design considerations that go into the making of a new town in Singapore today. To put these elements in perspective, a brief description of recent developments may be useful.

Having attained greater affluence, Singaporeans aspire to a better environment, improved building designs, and finer finishes. As the HDB is capable of achieving these goals, it is also in the interest of the country to erect buildings that have a longer life than before. There is also a greater demand not only for sports and recreational facilities, but also for facilities for institutional, religious, communal, and welfare uses. For example, since the inception of the scheme in 1977, 15 homes for the aged have been established. In old estates, some old buildings have been demolished to



[a] Additional criteria or scheme introduced. Where superscript is not shown, subsequent boxes supercede previous ones.
[b] The family can be split into two income groups, with income ceiling at S$3500 maximum.

Fig. 7. Changes in eligibility policy.

make way for better facilities. In terms of design, desires have been expressed for greater individual character in the new towns and, within each new town, in the various neighbourhoods and precincts. In old estates, some old buildings have been demolished so as to introduce better flats and a new mixture of socioeconomic groups. There is a general desire for improvement in the quality of life.

The desire for a better quality of life, the policy to extend public housing to a larger segment of the population in need of housing, and the current inflation in private property values converge to sustain a continuous rise in the demand for public housing. There is pressure not only for more housing, but also for speed. However, counter to these trends is the greater-than-ever necessity to exercise cost control because of the unprecedented and alarmingly high inflation rate of construction cost experienced in 1979 and 1980. Events in the last year or so indicate clearly that something has to be done to keep building costs within the economic means of applicants. On the one hand, the current emphasis for quality in public housing may need to be moderated; on the other, the HDB planners, designers, and engineers will endeavour to find ways to reduce cost with a minimum sacrifice of quality. The new-town development comprises four different, yet related, dimensions.

Building Design

There are two parts to building design: the building blocks and the flats themselves.

Building Blocks

Most building blocks take the form of 9- to 13-storey slab blocks or occasional four-storey slab blocks and 20- to 25-storey point blocks. On each floor of the slab block, the access balconies are segmented to be shared by four to eight families to create a reasonably self-contained communal space known as the courtyard-in-the-sky. In the past, there were one-room flats designed with central corridors, not conducive to the concept of the courtyard-in-the-sky. Fortunately, in the current fifth five-year program, only a negligible number of one-room flats is required.

In the past, for the four- and five-room slab blocks, the design consisted of a single staircase serving two units of flats per floor only. These flats were accessible directly from the staircase without going through a corridor. There is no conclusive evidence as to whether this design is more, or less, desirable than those with access balconies. However, this arrangement limits the number of neighbours able to provide surveillance of each other's flats against crime and vandalism. Therefore, in recent years, mixing the three- and four-room and the four- and five-room flats was attempted through the use of the segmented access balconies. For the point blocks, usually four families per floor share a common lift lobby. Continuous attempts will be made to similarly transform these lobbies into courtyards-in-the-sky. To respond to the call for more individual characteristics, the buildings in different new towns are given recognizable design features on the columns, the corners of the block, or the roofs. The results of these experiments in the last 3 or 4 years seems to be reasonably successful.

Flats

As far as the improvement to the flats is concerned, the emphasis today is to provide better building design to upgrade public housing so that they can better stand the test of time both visually and structurally. This is done by using better-manufactured hollow blocks, more-extensive use of bricks or solid concrete blocks, and better internal finishes (Table 3).

Efforts are made to promote barrier-free designs. It is recognized that, to help the physically handicapped, limited barrier-free design in the housing estate would not help much unless there is a total effort to making everything barrier-free. However, this can be hard to justify. In the housing estates, barrier-free designs are introduced wherever justifiable and within reasonable costs.

Planning

New towns have been planned on a hierarchical basis. A town of about 200 000 people is made up of five to six neighbourhoods, each of which is made up of six to seven precincts. The precinct is in turn made up of seven or eight building blocks, within each of which there are about 100 to 150 families. Within the town is the town centre; within the neighbourhood is the neighbourhood centre; and within each precinct is the precinct square. The town centre is also the terminal point of the town's internal and external bus systems. The average net density in the residential area is 175 dwelling units per hectare. Taking the new town as a whole, the gross residential density is 60 dwelling units per hectare. Around the precinct square are the kindergarten and the corner stores. The focal point of the building block is the free ground floor and the courtyard-in-the-sky on the upper levels.

Major estates roads radiate from the town centre to the various corners of the town. Neighbourhood centres are generally located at the crossing of two main estate roads. Access to the precinct goes through somewhat meandering local roads, which are designed to slow down the traffic and also exclude the through traffic. The land-use distribution of the new town shows that the major uses are for residential, industrial, and roads (Table 4). Over the years, the HDB has formulated planning standards and guidelines that reflect the needs of society. Some of these are actually expressed in the form of land leased to private developers.

In recent years, there has been a much greater desire to achieve more evenly distributed social and economical groups in each neighbourhood and, preferably, in each precinct. This objective could not have been achieved earlier. Consequently, in old estates where the population consists predominantly of the lower social and economic groups, the HDB will attempt, where justifiable, to demolish some of the old buildings to inject some newer buildings and people of higher social and economic strata. Also, in the interest of local identity, a greater attempt is being made to preserve any worthwhile existing development, where feasible, within a new-town site. In this way, it is hoped that a stronger sense of community continuity and a greater appreciation of the past can also be nurtured.

Environmental Design

In terms of the third dimension of the new-town concept, the environ-

Table 3. Schedule of standard finishes and fixtures for different types of public housing.

Description of standard finishes and fixtures	Improved flats					New flats		Model 'A'			Executive apartment
	1-room	2-room	3-room	4-room	5-room	3-room	4-room	3-room	4-room	5-room	
Glazed wall tiles											
a) Kitchen				x	x	x	x	x	x	x	x
b) Master & common bath/W.C.			x	x	x	x	x	x	x	x	x
Mosaic tiles											
a) Kitchen				x	x	x	x				
b) Master & common bath/W.C.			x	x	x	x	x				
Non-slip ceramic tiles											
a) Kitchen								x	x	x	x
b) Master & common bath/W.C.								x	x	x	x
Single-bowl sink											
a) Aluminium i) single drainage board	x										
ii) double drainage board		x	x	x		x					
b) Stainless steel double drainage board					x		x	x	x	x	x
Pedestal-type water closet & washbasin to											
a) Master bath/W.C.					x	x	x	x	x	x	x
b) Common bath/W.C.					x				x	x	x
Squatting pan to											
a) Common bath/W.C.	x	x				x	x	x	x		
b) W.C.			x	x							
Washbasin											
a) Kitchen						x	x	x	x		
b) Bath				x							
M.S. casement window to all rooms and kitchen (except along access balcony)	x	x	x	x	x	x	x				
M.S. casement windows to kitchen and all rooms at rear of building only								x	x	x	x
Aluminium-framed sliding windows to all rooms in front of building only								x	x	x	x
Aluminium-framed sliding door to balcony/living room					x					x	x
a) Ceramic tiles to ground floor lift lobby								x	x	x	x
b) Ceramic tiles to all walls at lift openings								x	x	x	x

Table 4. Land use in a typical new town of 40 000 dwelling units.

Land use	Area (ha)	Percentage of total area (%)
Town centre	30	4.5
Residential	270[a]	41.0
Schools	65	9.8
Open space	25	3.8
Sports complex	20	3.0
Institutions	25	3.8
Industry	130	19.7
Roads	80	12.1
Others	15	2.3
Total	660	100.0

[a]Includes seven neighbourhood centres of 6 ha each.

mental design, the HDB seems to have gone through various phases over the last 20 years. It started practically by planning good orientation to the sun and wind, and recently shifted in response to greater demands for quality and more-effective use of space. Good environmental design is the result of a combination of design considerations. Principally among them are the issues of building orientation, human scale, meaningful spaces, street-block design, street architecture, and the handling of topography and landscaping.

The first, and most important, consideration is still orientation. However, besides orientation to sun and wind, greater attention is being paid to minimizing the noise of traffic from main roads. This is done, in part, by placing more low-rise buildings shielded by earth mounds along these roads. They in turn shield the high-rise buildings further away from the roads. There is also a greater emphasis on the human scale of the environment. Through a series of revisions to the guidelines on building spacing, it is now possible to incorporate up to 7% of dwelling units in two- to four-storey, medium-rise buildings in each precinct. It is also possible to keep most of the buildings between 9 and 13 storeys, with the exception of a few point blocks. Therefore, unlike the buildings constructed in the late 1960s and early 1970s, the new towns of today relate to the human scale better, despite the higher density and the substantially higher plot ratio, than those in the past. High density is necessary to conserve land, and the higher plot ratio results from the construction of larger flats although maintaining the same population density in the residential area. There is a greater emphasis on the more meaningful use of communal spaces at different hierarchical levels. This is done by more careful grouping of buildings to provide a sense of enclosure to these spaces. It is also achieved by avoiding unusually large spacing between buildings. There is also a conscious attempt to turn the spaces into residential greens or squares, wherever appropriate, as focal points for human activities.

Another concern of environmental design is the visual effect. In the past, because of the preoccupation with building orientation in relation to sun and wind, most buildings were built in an east-west direction. This results in a relatively poor sense of enclosure in between buildings and in the loss of the sense of street blocks as one might find in the old city centres. There is now a renewal of emphasis on creating this sense of street block by more-frequent use of lower building blocks built in the north-south direc-

tion to link up with the taller blocks built east-west. The lower blocks, though exposed to the rising and setting sun, can be shielded, at least partly, by trees. Whereas in the old city the street blocks are surrounded by roads, in the new town, the street blocks are surrounded by greenways or pedestrian paths that can make the environment even more pleasant than the old city. Although preserving desirable visual effects in achieving individuality and variety, special sites, often carefully chosen to accentuate the vista, are reserved at strategic locations for either special residential blocks or institutional buildings. In general, there is an attempt to create a greater variety of urban texture in the new town. The spaces should be as different as possible from one another and there should be meaningful links by way of pedestrian paths between these spaces.

Attention has also been given to the quality of urban design for the street. Instead of paying attention solely to buildings within each superblock bounded by streets, greater emphasis is placed on designing on both sides of the street to create urban spaces around the street. Although a conscious effort has been made to use street architecture and street-block design to give the new town a more urban character, interest is maintained to make better use of the existing topography. Emphasis is placed on moulding earth to make it look natural and planting vegetation so that it looks natural rather than artificial. The effort towards a greater sense of naturalness is not incompatible with the drive towards better quality in urban design.

Community Organization

The fourth dimension of a new town is the community organization. The other three dimensions are attempts to design physical settings, in which people can lead a meaningful lifestyle. Community spirit should nurture over time. But, in Singapore, with new towns and housing estates being developed at such a rapid pace, some additional effort may be desirable to promote this feeling of community early. This requires the efforts of the residents and all the relevant government and community organizations. Besides the citizen consultative committees and the management committees in the community centres, the latest addition to help bring neighbours together came in the form of residents' committees. The residents are divided into zones of 500 to 1000 families. Each zone forms its residents' committee to promote neighbourliness through the circulation of information, organized programs, and community projects. In the newer new towns, by breaking up the neighbourhoods into precincts, an attempt is made to correlate the physical subdivision of the town to coincide with the zones of the residents' committees.

The Implementation Strategy

In an account of new-town development, it is equally important to examine the guiding policies and the implementation machinery as well as the contributions by planners, designers, engineers, and the community leaders.

The thinking that shapes the direction of public housing may be identi-

fied in two parts: the major external influences, and the salient HDB policy. Of the principal external influences, government support to the public-housing program such as financing, compulsory land acquisition legislation, and a streamlined government machinery, play significant roles. Other factors are the powers entrusted to the HDB as a statutory body and the high degree of cooperation and positive response on the part of the residents. Without these positive external influences, the HDB would be much less effective in formulating its policies and implementing the public-housing programs.

However, the helpful external influences alone do not necessarily ensure a successful public-housing program unless the HDB complements them by workable policies. Nine specific guidelines are identified:

- clarity of target groups
- supply matching demand
- low cost, good value, and affordability
- upgrading construction technology
- comprehensive development
- good estates management
- sound resettlement policy
- open communication channels, and
- policies responsive to needs.

The HDB always tries to identify clearly the target groups entitled to public housing. The target group has continued to expand in accordance with the higher aspirations of the people, often matched by a corresponding increase in the capacity for delivery. The flats have relatively low selling prices or rentals so as to maintain a high level of affordability by the applicants. This is possible because not only is full use made of the economy of scale in the construction of flats, but also selling prices or rentals are set below cost. The same flats in the hands of private developers would cost substantially more both to build and to buy. The public-housing flats, therefore, are of high intrinsic value. To further enhance the good value and low costs, the HDB has had to lend its support to, and recommend, upgrading of the construction technology. For the high-rise and high-density public housing to be well received by the people, the facilities must be well provided and easily accessible. To do so the HDB has to plan and develop new towns and housing estates comprehensively. This should be complemented by efficient estate management. The HDB has geared itself up reasonably well to achieve these objectives. Despite government support in the form of the Compulsory Land Acquisition Act, land assembly would have been met with strong resistance by squatters unless there were a sound resettlement policy to ensure that every resettlement case can be offered alternative accommodation, be it a residential, commercial, industrial, or farming case. To upgrade their operations continuously, in terms of either design or management policy, the HDB has endeavoured to maintain open grievance channels for feedback and research. These efforts have resulted in public-housing policies that are responsive to needs and self-renewal.

On the implementation side, the HDB is set up to provide comprehensive in-house professional and administrative services to handle the implementation and maintenance of public housing. The Administrative and Finance Division as well as the Internal Audit Department provide the staff

functions; the Building and Development Division, the Estates and Lands Division, and the Resettlement Department provide the line functions. Professional staff such as planners, architects, and engineers interact with the estate management staff and the land acquisition team. They work closely with the resettlement staff to clear the land. At the end of the project, they work closely with the research officers to provide feedback. This project flowchart is expressed in greater detail in the building development flowchart (Figure 8). The aftercare management is the sequel to the project development flowchart. It consists of estate management that takes care of maintenance and conservancy, labour and welfare, landscaping, hawkers and markets, car parks, essential services, security, reverted properties, land management, and finance.

To promote regular contact with the residents and to help them understand the HDB's latest policy and thinking, the "Residents' Handbook"

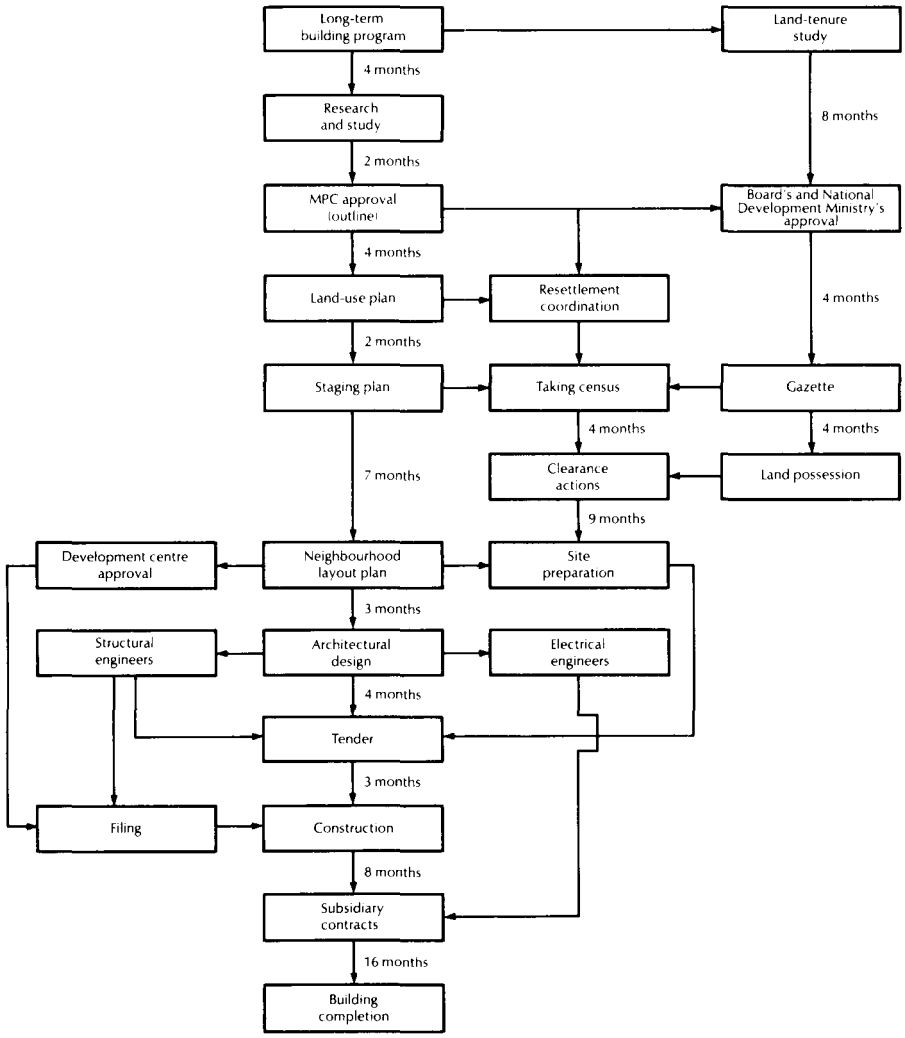


Fig. 8. Building development flowchart.

and the bi-monthly magazine "Our Home" are distributed free of charge. The Systems and Research Department carries out research and surveys to better advise the planners, designers, and estate-management officers. Thus, the HDB can hope to stay ahead of problems and strive to anticipate problems and solve them before they arrive.

The running of the residents' committees is beyond the scope of a development agency such as the HDB, but rather is carried out under the overall auspices of the government. However, being a management organization HDB has kept in close touch with the organizing committees. The HDB estates officers are requested to serve as liaison officers for the secretariat of the residents' committees and to attend their meetings. The purpose is not so much to participate in their activities but to provide information and explanation, and to report the needs and problems back to the HDB area officers for early action.

Conclusions

Through trial and error, the HDB has evolved a new-town model for Singapore, and it seems that the rudiments of this model are likely to remain quite constant in the near future. The necessary components of a new town, the techniques of handling the visual and environmental problems, are not new. Nevertheless, what has been gratifying is that, in this urban laboratory, with youthful enthusiasm, confidence, and a pragmatic sense of timing, the HDB has been able to draw upon these techniques to meet people's needs. What makes the new-town model uniquely Singaporean is the way in which the various components of land use and environmental inputs have been combined to suit the local situation.

The major departure from most other public-housing or new-town development is the high-rise, high-density character of the new towns. At the time Toa Payoh and Ang Mo Kio were built, in the mid- and late-1960s, a new-town size of around 200 000 people was used. This was probably another departure from the then-prevalent size for new towns of about 120 000 people in many European countries. These towns have to be large because, as a developing country, a higher threshold population is needed to sustain the essential facilities provided.

A certain monotony is generated by filling a whole new town with only flats and few other dwelling types and cynics have suggested that HDB chooses height to show off new construction technology in large and tall buildings. They should not forget that a high price is paid for choosing to build high-rise structures: namely, the price of maintaining lifts and water pumps for the roof water tanks. No one would opt for such a difficult choice unless there was no other option. In this case, the problem is land shortage. Fortunately people seem readily adaptable to the lifestyle of high-rise living, and their levels of satisfaction have been extremely high (Table 5).

The cooperation and satisfaction of the residents are also helped by the weather conditions in the tropics. Life higher up is cooler and less affected by insects. Whereas in temperate climates the access balconies are almost perennially cold and thus not much used, in the tropical climate balconies provide pleasant areas for socializing with immediate neighbours, and are

Table 5. Percentage distribution of general opinion on the estate and flat, 1968, 1973, and 1977.

	1968		1973		1977	
Opinion	Estate	Flat	Estate	Flat	Estate	Flat
Satisfactory	71.7	67.6	76.8	78.7	73.4	73.0
Acceptable	25.7	23.6	20.4	16.8	23.8	19.1
Dissatisfactory	2.6	8.8	2.8	4.5	2.8	7.8

used to their full potential.

Working with this model of new towns, the needs of new towns today and in the immediate future can be identified as the need for visual variety and the need for a stronger community fabric.

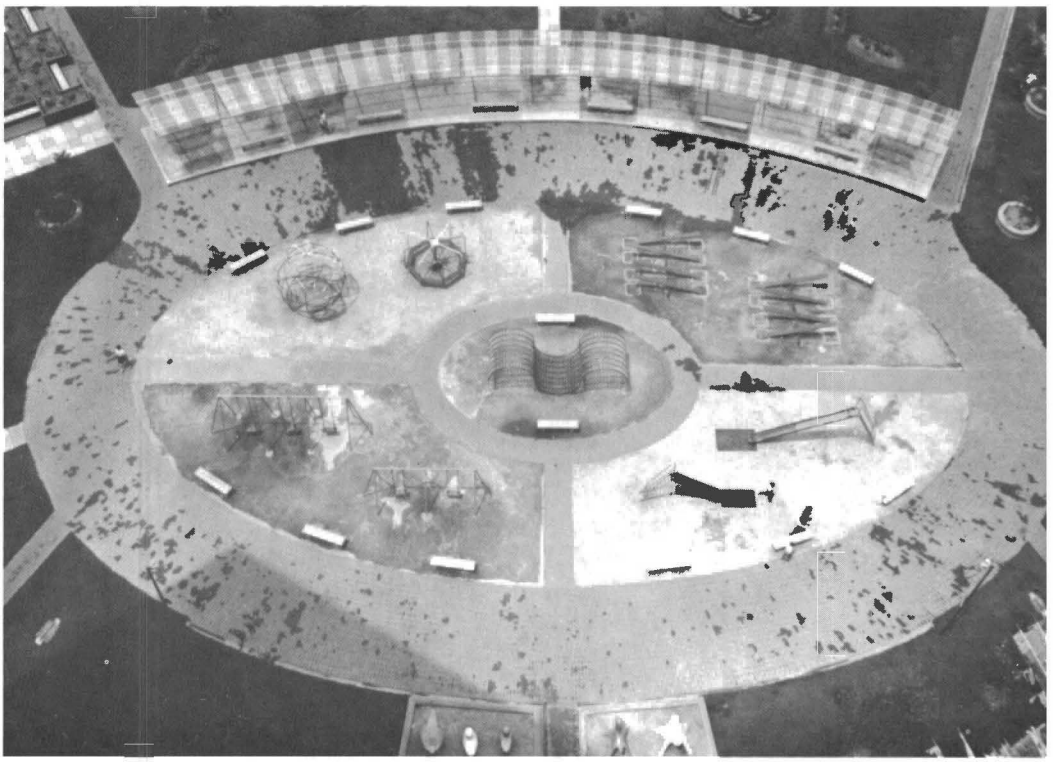
To break the visual monotony presents quite a challenge. First, restrictions are enforced by the need to keep construction costs relatively low, or else the applicants may face financial burdens unforeseen by them at the time of application. Second, constraints are placed by the need to keep the majority of flats standardized, or else the building industry may have difficulty coping with all the variations. Thus, in trying to vary the building blocks, change the heights, and shape the columns, the contractors and workers complained that these throw their normal work pattern out of gear, resulting in delays and higher costs. Therefore, flat designs are, of necessity, highly repetitive and building blocks have to be similar in length and height. The building structures have to be essentially concrete framing with in-fill panels made of bricks or hollow blocks. However, attempts are made to improve the design of flats by constantly looking for ways to create better rooms, provide better ventilation, and incorporate better finishes and fittings.

Design changes for the sake of change may bring about difference and variety, but not necessarily good design. Between poor but varied design and better design with less variations the choice is clearly for the latter, for it can better withstand the test of time. The sophistication of design standard must stay only slightly ahead of the readiness of the construction industry, or it may cause havoc to the industry, resulting in reduced output and increased costs of housing. Between a paucity of housing supply with individual architectural expression and adequate supply of housing with greater standardization, the choice is again clearly for the latter.

On the question of visual variations, it may be argued that a little bend here and there, a different shape of column and beam, or a range of brick colours are mere cosmetic measures. That may be so, but it is better this way than the indiscriminate adding of so-called design features to the buildings, for these are mere novelties. Novelty fades as quickly as fashion, and fortunately for fashions, they easily disappear from the scene. Buildings, on the other hand, are made to last.

As to the development of stronger community fabric, it is interesting that high rise and high density are rarely cited as problems inimical to the development of community sentiments. It is desirable for neighbours to know each other well, for this will enable them not only to look after each other's flats and help each other in emergency, but also to promote a sense of belonging in the community. It is hoped that the efforts of the residents' committees, and those of the citizens' consultative committees, the man-

agement committees of community centres, and many other government and public institutions will help the community of people in the public-housing estates and new towns to better understand the nature and needs of their community. Simultaneously, the community will be able to attain the essential attributes and fulfill their needs.



Management of Singapore's New Towns

Lim Kok Leong, Chin Kein Hoong, Chin Koon Fun, Leslie Goh, and Ong Sze Ann

The Housing and Development Board (HDB) was constituted by legislation in 1959, in response to an acute shortage in housing coupled with a rapidly expanding population. In an effort to provide low-cost public housing for the people of Singapore, the development of the expertise in estate management necessary to the success of any long-range national housing program was not forgotten.

Housing involves the provision of a bundle of services, in terms of shelter and opportunities for family life, recreation, community living, and economic prosperity. Public housing means more than the supply of houses to the public and should include management and supervision.

Estate management is, therefore, not an afterthought or a by-product of the housing program but a conscious pursuit of specific objectives through the implementation of carefully planned policies. Over two decades of public housing, housing management within the HDB has grown along with the construction program.

Two factors make efficient estate management necessary and vital to public housing in Singapore. First, public housing, no longer viewed as a means to alleviate accommodation shortage, is fast becoming a way of life for about 70% of the population. By 1985 this figure will have grown to 75%. This has implications for the planning and implementation of management policies which are likely to have to devote greater attention to social issues. Secondly, some S$6.7 (US$3.35) billion have been invested in Singapore's public housing programs as of March 1981. The size and significance of this capital investment make good estate management a prerequisite for preserving the economic and social value of the individual units and of the estates as a whole.

Estate-Management System

Although six new towns have been completed besides many housing estates, five more new towns are on the way (Figure 1). By the end of December 1980, the Board was managing 346 371 dwelling units.

These housing estates and new towns are all managed from area offices located in the midst of the estates. At present, there are 28 area offices. Besides providing on-the-spot services for the convenience of the residents, this decentralized management system enables direct communication and personal contact with residents and local community organizations.

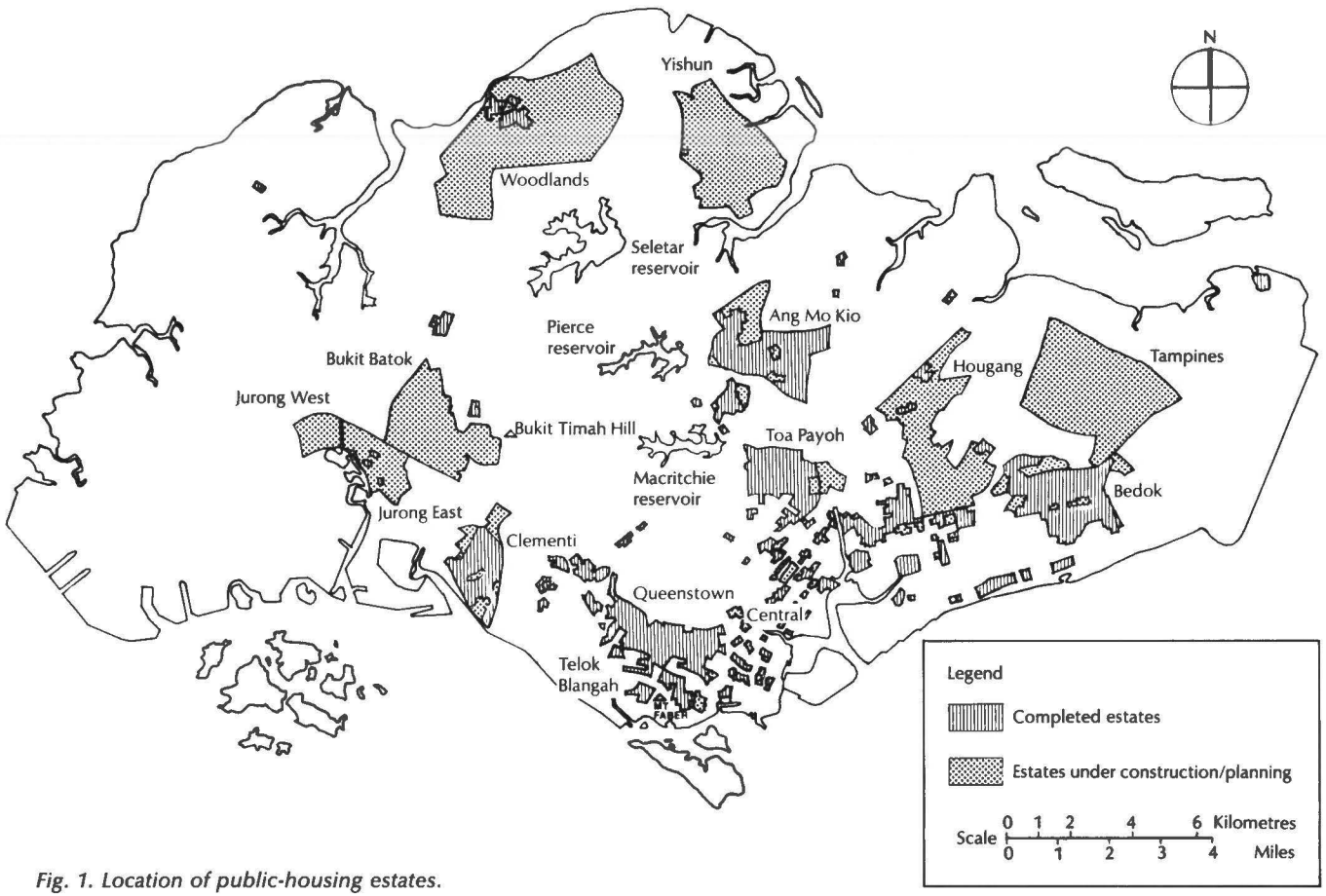


Fig. 1. Location of public-housing estates.

The area offices are guided by a central organization called the Central Administration that is responsible for the formulation, coordination, and implementation of management policies. Collectively, the Central Administration and the area offices form the Estates Division of the Board.

Each area office has its own administrative hierarchy and supporting staff to carry out the day-to-day management of about 15 000 units. The administration of the area offices (Figure 2) covers the following:

- tenancy and lease supervision
- property maintenance and repairs
- conservancy works and services
- management of car parks
- provision and upkeep of trees and landscape
- management and control of hawkers
- collection of rent and other financial matters, and
- fostering good landlord and tenant relationships.

Also, there is an Essential Maintenance Service Centre (EMSC) that operates round-the-clock to provide prompt attention to breakdown of essential services such as electricity or water supply failure, lift breakdown, sanitary chokage, overflowing water tank, or water-pipe leakage. EMSC's nerve centre at HDB headquarters has a direct telephone communication system (hot line) to receive and transmit calls directly to area offices where maintenance and lift-rescue teams are stationed for immediate response. All EMSC vans are equipped with VHF radio telephones so that rescue crews can be directed to the next job without delay.

Trends in Estate Management

When the HDB first embarked on the task of meeting the acute housing shortage in the early 1960s, the primary objective was to build the maximum number of units within the shortest possible time at the most economic cost. Limited by the scarcity of resources, the standard of housing was austere and the scope of estate management was confined to physical maintenance and functions expected of a house building agent, i.e., rental collection and conservancy.

The emphasis on service and maintenance was secondary to the more urgent need of rehousing. Although cognitive at that time of the immense social, cultural, and psychological upheavals associated with rehousing, the pressing circumstances of the day were such that the building program rather than the community was the focus of attention.

The sample household survey conducted in 1968 showed that the majority of the tenants were satisfied with their living environment (67% with flats, 72% with estates). However, clearly some have failed to adjust to their new environment as a way of life, because they brought with them socially deviant habits of vandalism and littering.

In meeting this problem, many interim measures have been attempted including the use of the mass media to instill goodwill and civic consciousness, and to advocate good social habits. National campaigns against littering and vandalism were carried out with legal support. Tenant participation in maintaining their environment through the Block Representative Scheme was encouraged. The main functions of this scheme were to

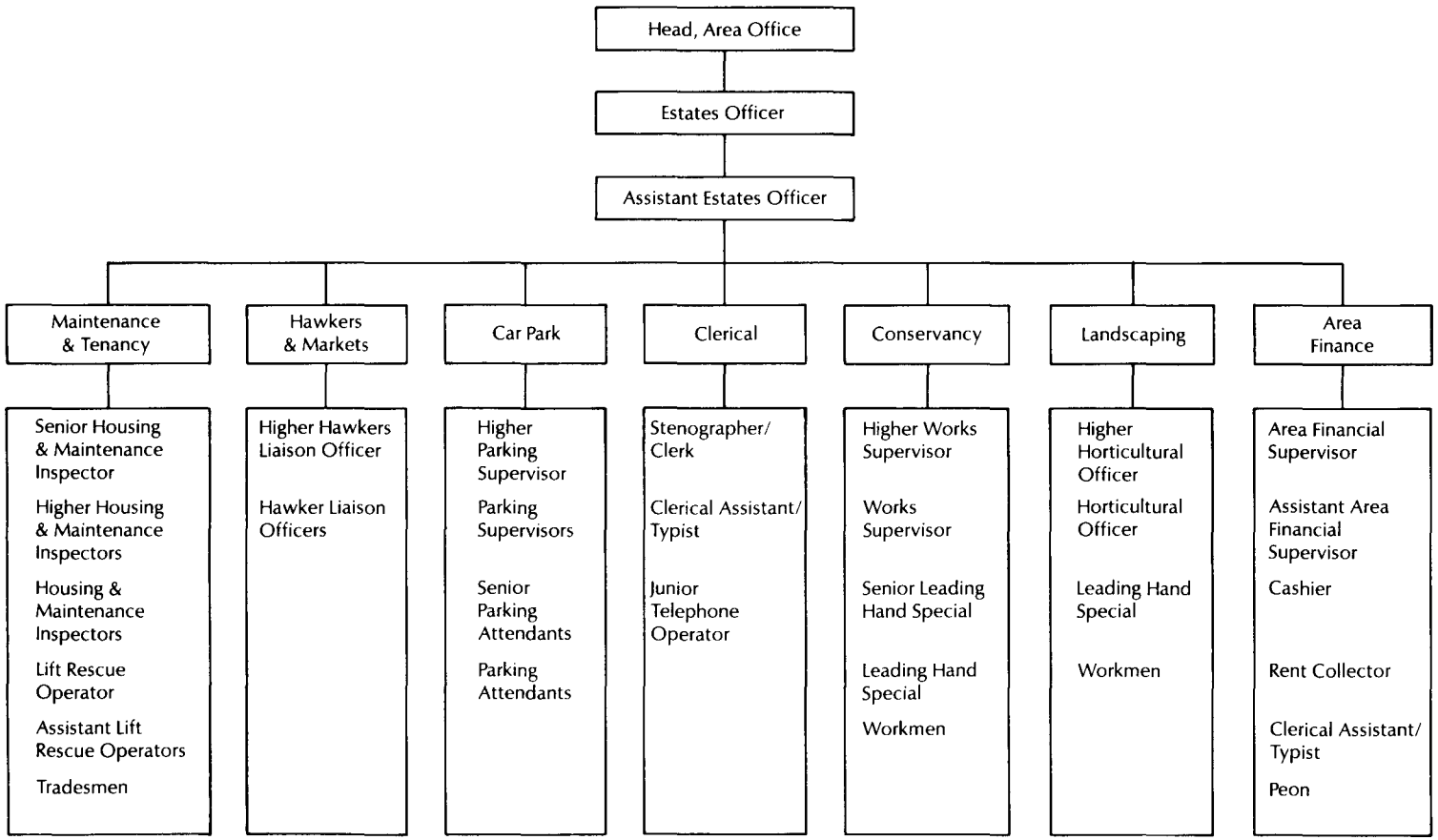


Fig. 2. Organizational setup of area office.

act as liaison intermediaries between the Board and the residents, to organize and coordinate the joint efforts of the residents in various campaigns and in the promotion of a community spirit, and to discourage anti-social habits.

An appraisal carried out 3 years after its conception, however, revealed that the Block Representative Scheme had inadequate support from the residents partly because of the fact that the concept of a high-rise, high-density living environment was new to many people. Moreover, the Board's prime concern then was the solving of the urgent housing backlog and, hence, it was unable to provide the administrative backup to ensure the scheme's success.

By the 1970s, the backbone of the acute housing problem was broken and by the end of 1980, some 1.7 million inhabitants constituting about 70% of the total population lived in public housing. It will be instructive to reflect on the past priorities and to chart new directions and policies for the future.

In this self-examination, cognizance is taken of the socioeconomic changes in the country. The growing affluence and improving standards of living as a whole have led to significant changes in the socioeconomic profile of the HDB residents. Whereas the early HDB residents were mainly resettlers of poor and large extended families, residents today are drawn from economically stable nuclear families who opted on their own accord to reside in HBD flats.

The character of the HBD residents is also undergoing a dramatic change, for most are no longer rent-paying monthly tenants but are house owners with a stake in their properties. To achieve the national aim of creating a home-owning democracy, bigger and better-designed flats are built that are sold under the "Home Ownership Scheme." This scheme, first introduced in 1964, gained a foothold in 1968 when the use of Central Provident Fund (CPF) (equivalent of Social Security) contributions were permitted toward payments for the flat. By the end of December 1980, of a total of 346 371 dwelling units under HDB management, 62% or 214 594 units had been sold to the public under the "Home Ownership Scheme." There were 78 180 applications on the waiting list to buy HDB flats compared with 8394 applications to rent.

Recently, public-housing management has placed emphasis on the welfare and quality of life of the residents. Community and quality of life, over and above the ordinary relationship of landlord and tenant, will be made an integral part of housing mangement. Resident participation in management is now actively emphasized. Owners and tenants alike are encouraged to participate in looking after the common properties in their own apartment blocks and neighbourhood whereas the Board embarks on upgrading the quality and design of the estates and their surroundings. To facilitate easier communication between residents and the management, area officers are sited at locations that offer maximum accessibility for advice and consultation.

Today, the role of HDB has changed from that of a house-building and maintenance agency in the 1960s to a community landlord. The expressed aim now is the creation of a gracious living environment where residents would have pride in ownership with a sense of identity and self-reliance.

Estate Management Problems

As we move into the third decade of public housing, the dynamics of change will bring about new problems. To be able to deal effectively with these problems, estate management must evolve with the times incorporating new goals, concepts, and managerial tools. The problems that estate management is likely to face in the 1980s are categorized into two major groups: "new" problems, and manifestations of old problems.

"New" Problems

With the rising standard of living and social expectations in the 1980s, residents will be more perceptive towards their living environment. The provision of shelter alone is insufficient and growing emphasis must be laid on the quality of houses and the amenities provided by the estates. Further, as more new towns are built, a pattern of migration of residents from older estates to these new towns is expected. Those who have experienced living in the first generation new towns are likely to have expectations different from those who live in HDB flats for the first time.

The role of management toward this end is to strive to maintain a high standard of physical management. Estate management cannot afford to be by complaints, i.e., responding only when complaints are lodged. The management philosophy is "Forward Planning," in seeking to stay ahead of the problems by continuously identifying and anticipating them. The decentralization system of estates management by area offices facilitates this.

The area offices, located in the midst of the estates, are in constant contact with the residents and local community organizations. The staff of the area offices carry out daily physical inspection of the estates. The management staff of the area offices are therefore able to monitor development and activities in the estates. If there is any deficiency or lapse in the services, it can be detected early and be dealt with immediately, thereby averting major problems later on.

The heads of area offices and the senior management of the Central Administration meet every month to discuss and resolve problems together. Cross-fertilization of ideas is encouraged. There is also an institutionalized quarterly meeting between the architects, engineers, and planners of the Building and Development Division and the estates officers of the Estates and Lands Division. Such dialogues between the residents and the Board, and amongst the staff within the Board, are essential for effective management. Also, the Systems and Research Department carries out research studies and surveys to provide management with information for planning.

Suggestion boxes are provided at all area offices as an additional avenue for residents to express their suggestions and grievances. This helps to monitor the areas of deficiency in the services. All complaints received are subjected to extensive qualitative and quantitative analysis and are translated into key indices to monitor and evaluate performance. Performance monitoring and evaluation is an important facet of the physical management, and needs to be continuously analyzed, monitored, and evaluated to correct and improve it. Monthly analysis charts and statistics are dis-

seminated to all the area offices to let the staff know their areas of deficiency in which improvements are required and their standards of performance in relation to another area office. Each area office functions as a performance centre and an atmosphere of healthy competition is encouraged. Also, a special action unit conducts a regular inspection of all estates to further help the area office identify and evaluate their maintenance standards.

At the same time, management skills and techniques are refined to produce better results to meet new expectations. A management study of housing and maintenance inspectors has been carried out. Its aims were to evaluate and improve the workload and efficiency, to achieve clearer organizational work flow, and to increase performance standards. Based on the study, a 3-year labour development plan was drawn up that includes the provision of comprehensive in-house training programs. Several changes were also adopted in the operational procedures and systems relating to staff establishment after a management study of area offices was completed in 1978.

There is a need for management to be genuinely concerned about efficient physical management and to demonstrate this concern to its residents. Failure to do so creates an atmosphere of mutual distrust, dissatisfaction, and apathy. These factors will in turn influence residents' own feelings toward the estate and their willingness to participate in its care and maintenance.

As in all other quarters of the rapidly growing economy the problem of increasing labour shortage exists. Every measure, therefore, needs to be taken to mechanize the operations, particularly those that are labour intensive. Within the Estates and Lands Division, a special unit has been set up to study and research this field. A coupon system in car parking has been introduced to save labour. The unit is presently exploring suitable alternatives for the cleaning and refuse collection system and the mechanization of landscaping operations. The efforts by the various divisions are coordinated by a planning, research, and development committee comprising senior officers from the various divisions. If the objectives can be reached with effective mechanization, substantial saving in labour can be achieved without sacrificing the high standard of physical management.

The government's effort in curbing population growth emphasized the setting up of small nuclear families. The physical design and configuration of the HDB flat complement this type of family unit. As a result the extended-family system is slowly being eroded. With the aging of the demographic profile, a dichotomy of flats catering to nuclear families and the growing presence of the aged will emerge. It is the government's intention that children should shoulder the responsibility of caring for their aged parents and there should be preservation and strengthening of the family unit.

Toward this end, management policies have been changed to pave the way for parents and their married children to reside near each other so that the families, though living in separate flats, will be able to enjoy the attendant advantages of an extended family. A joint balloting scheme was introduced in August 1977, under which the balloting date will be determined by the registration of the parents or the children, whichever was earlier. Since the introduction of this scheme, about 4000 families have

registered for flats near their parents or children, and half of these were given adjoining flats or flats in the same estate. A good example of this is a Chua family in which the extended family of 29 members opted for the benefit of the scheme and were allocated five adjacent flats on the same floor in an apartment block at Ang Mo Kio.

Another scheme that gives priority for transfer of rental flats has brought 900 tenant families closer to one another. Recently, the Board created another opportunity for parents and children to live close together by allowing mutual exchange of flats for families with only 1 year occupancy of their flats.

In a preliminary investigation carried out by the Board, it was found that families living together enjoy the following economic and social advantages:

- the financial and emotional support for retired family members
- the retired members can look after the young children, allowing the mothers to continue working
- sharing of expenses by better use of facilities
- sharing of daily routine housework, and
- sufficient privacy for each family unit.

These changes illustrate that estate management is a dynamic and an on-going process, forever changing and adjusting to meet the socioeconomic changes in the nation.

Manifestations of Older Problems

In preparing for the problems of the 1980s issues not fully resolved in the past have not been forgotten. These include the lack of social integration among the residents on various floors and within the estate itself that results in a general lack of communal identity and attachment.

In the 1973 HDB sample-household survey, about 34% of the respondents admitted that they have never exchanged social visits with their next-door neighbours. More than 50% of the respondents have never exchanged social visits with other neighbours on the same floor. In terms of the scope of neighbourly contacts, it seldom extended to three or more households.

Sociological studies, such as that by Chang Chen-Tung (1975), do not attribute the low level of neighbourliness to the living conditions in our public-housing estate. It is generally accepted that neighbourly contacts increase with increasingly long periods of residence. In the past, villages and towns grew gradually over many generations with neighbourliness and community spirit evolving over the years. In modern development, new towns are planned, built, and filled with people over a space of only a few years.

A greater effort is, therefore, needed in assisting residents to assimilate to the ways of high-rise living and to strengthen the community ties, not ignoring, at the same time, the human need for privacy in social life. The long term management program takes cognizance of this issue, discussed in a later section under "New Directions."

As efforts are being made to upgrade the planning and design standards of new towns, the growing functional and economic obsolescence of the Board's older estates have to be tackled. Over time, a filtering process has been at play as more affluent residents move from these estates into new

towns with bigger and better flats. There is, therefore, the need to rebuild, rehabilitate, and revitalize the older estates. A program has been initiated to make the standard of living environment in the older estates comparable to that of the new ones. It includes providing additional amenities, improving existing buildings, converting one-room flats to larger units, and redeveloping old estates.

A total of 952 one-room emergency flats built in the early 1960s to meet the pressing need for shelter have been converted into larger three-room and four-room flats (Figure 3). Another 7458 one-room emergency flats have been demolished in estates in Bukit Ho Swee, Redhill, Kampong Tiong Bahru, MacPherson, Kallang Airport, and Changi. The demolition has reduced the density in these old estates, yielding valuable land for the injection of social, sports, and recreational facilities and the construction of better and larger flats. For example, the demolition at Dakota Crescent in Kallang Airport Estate would make way for the construction of 406 three- and four-room flats and five-room maisonettes. More open spaces for children's playgrounds, void decks, and car parks are being created (Figure 4). Redevelopment in Kampong Tiong Bahru involved the construction of two blocks of five-room flats, two blocks of three- and four-room flats, a 2-km jogging track complete with a keep-fit centre, and two playgrounds.

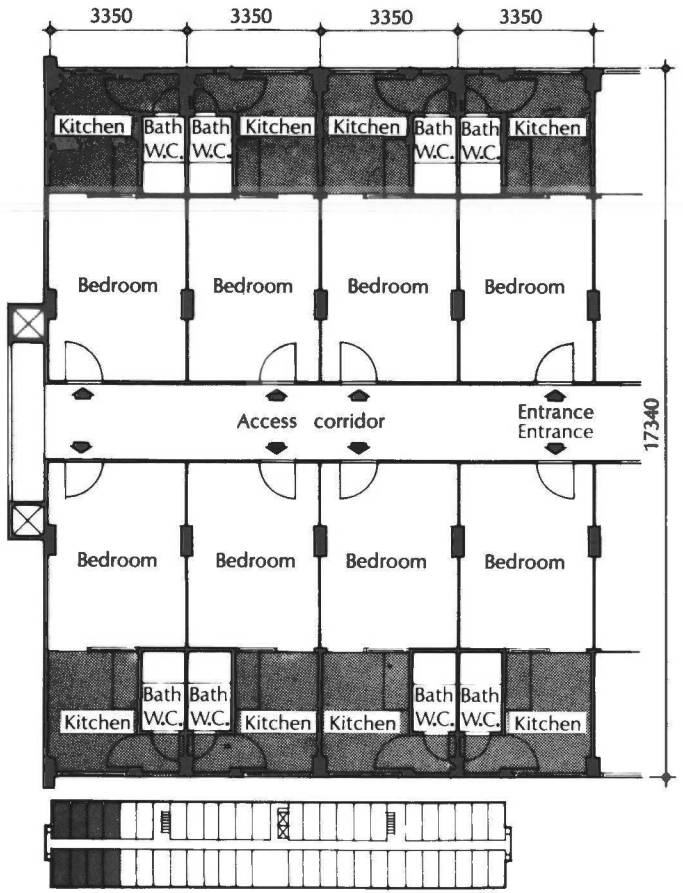
To upgrade existing buildings, additional lifts are installed in those old blocks with only one lift. Steel casement windows are fixed in those flats where open balconies existed before. This provision has improved the appearance of such blocks and the enclosed area has provided more usable space to residents. Other improvements include the water-distribution system, rewiring of old units, and installation of central television antennae. To check physical deterioration, the Board carries out comprehensive repairs and redecoration of the estates in a 5-year cycle. Where there is more rapid physical deterioration, the repairs and redecoration are even carried out more frequently.

New Directions

So far, the development of management trends and problems faced by the Board in the last two decades and in the years to come have been described briefly. It remains to highlight the directions that the HDB will take in the management of its new towns.

Under the fifth Five-Year Plan beginning in 1981, a new generation of new towns will be built in the outskirts of Singapore. The ultimate goal is to create entire planned communities, socially integrated with access to housing and associated amenities, freely and equally available to all community members. Toward this end, housing management has a creative role to play in the social transformation and community development of Singapore. It is indeed a formidable task that requires a carefully planned long-term management program. If social integration is achieved, then Singapore as a nation would have taken a giant step in overall social development.

To realize the potentialities that housing possesses in the constructive transformation of individuals, families, communities, and society in general, good housing management will constitute the application of skill and



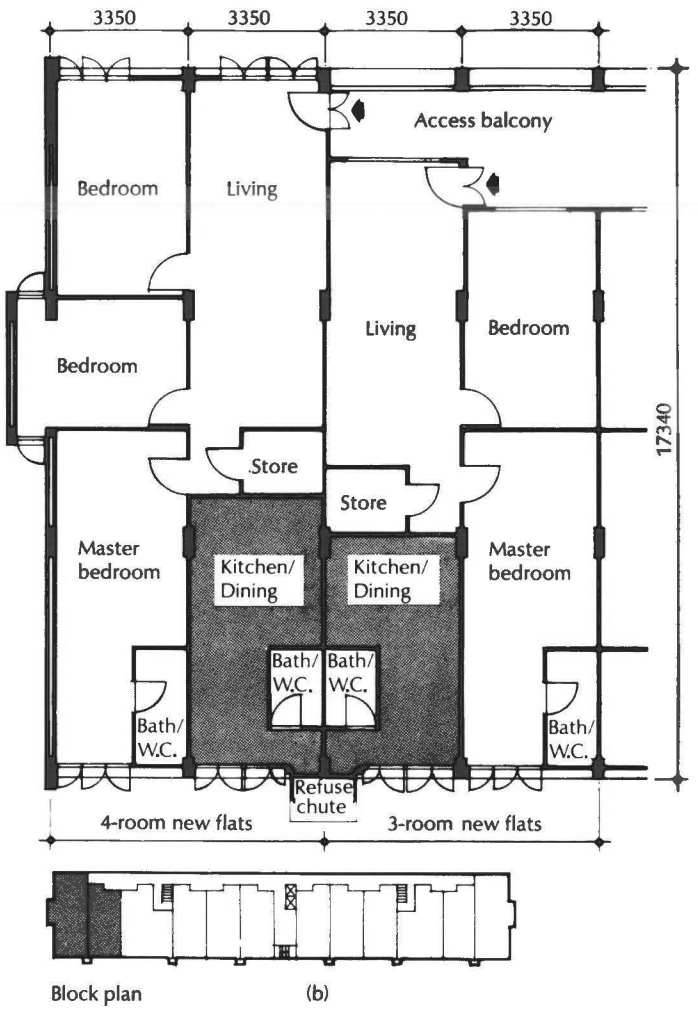


Fig. 3. One-room emergency flats (a) before conversion; (b) after conversion.

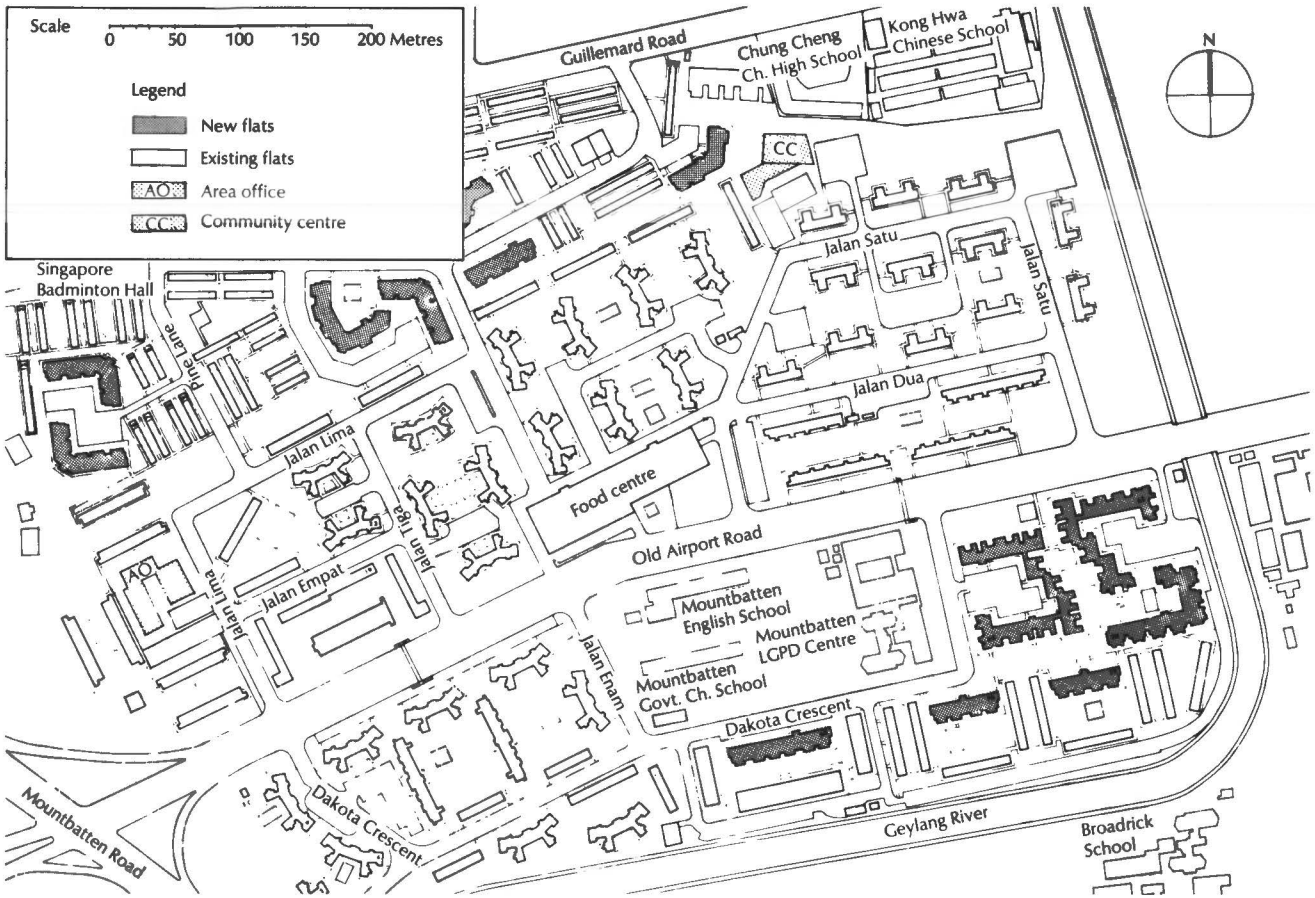


Fig. 4. Kallang Airport/Guillemard Road redevelopment.

resources in caring for the Board's property, its estate surroundings, and amenities. A sound relationship must exist between the HDB as a community landlord and its tenants, and amongst tenants themselves, so that the estate, as well as the individual flats, may give the fullest value to both the Board and the tenants. It is desirable for the HDB that properties should be efficiently and economically maintained and managed. From the residents' point of view, the individual flats should provide an amenable home environment and the focal point of a full and happy family life, whereas the estate surroundings should offer opportunities for greater social interaction in attaining the wider goal of an integrated community life-style.

Achieving this objective requires more than ad hoc management strategies. A multi-disciplinary and holistic approach is needed in setting up a long-term program of housing management in the 1980s. The program involves the planning and specification of goals and strategies, resident education, and resident organization and community relations.

Planning and Specification of Objectives

The planning of new towns requires the coordination of the physical, aesthetic, managerial, and social elements. It is well recognized that the design of the physical environment is a strong determinant of human behaviour and activity. People are better predisposed to social interaction if they are placed in an amenable physical environment with adequate provision of community facilities. A new planning concept, the precinct, is used in the planning of the new towns for the 1980s, which emphasizes the close relationship between physical design and social integration. It departs from the neighbourhood concept of 4000 to 6000 dwelling units, which covers too large an area for meaningful social interaction amongst residents.

Divided into precincts of 500 to 1000 dwelling units, each with its own landscaped square in its geographical centre, complemented with recreational, retail, and community services, residents would be able to perceive a physical and social identity unique to each precinct (Figure 5). For the town centre, a comprehensive range of facilities is planned. These include a bus terminus, area office, social function hall, polyclinic, library, hawker centre, and shops. Barring constraints, each town centre is located in the heart of the new town for accessibility, and some land is allocated for institutional, industrial, and recreational facilities.

A Social Research Unit has now been set up to undertake preparatory research and evaluation on the sociological data of residents. Its major role will be to assist and offer guidance in the formulation of comprehensive management policies.

Residential segregation acts as a physical barrier to social integration. In the planning of new towns, HDB has avoided the pitfall of stratified housing where the poor and the rich are stratified into distinct enclaves with little interaction. The policy of tenant selection here is based on income levels and, within new towns, the units are planned on a mixed basis where rental and sold units, big and small, are distributed heterogeneously.

Resident Education

Resident education is imperative in preparing residents for the respon-

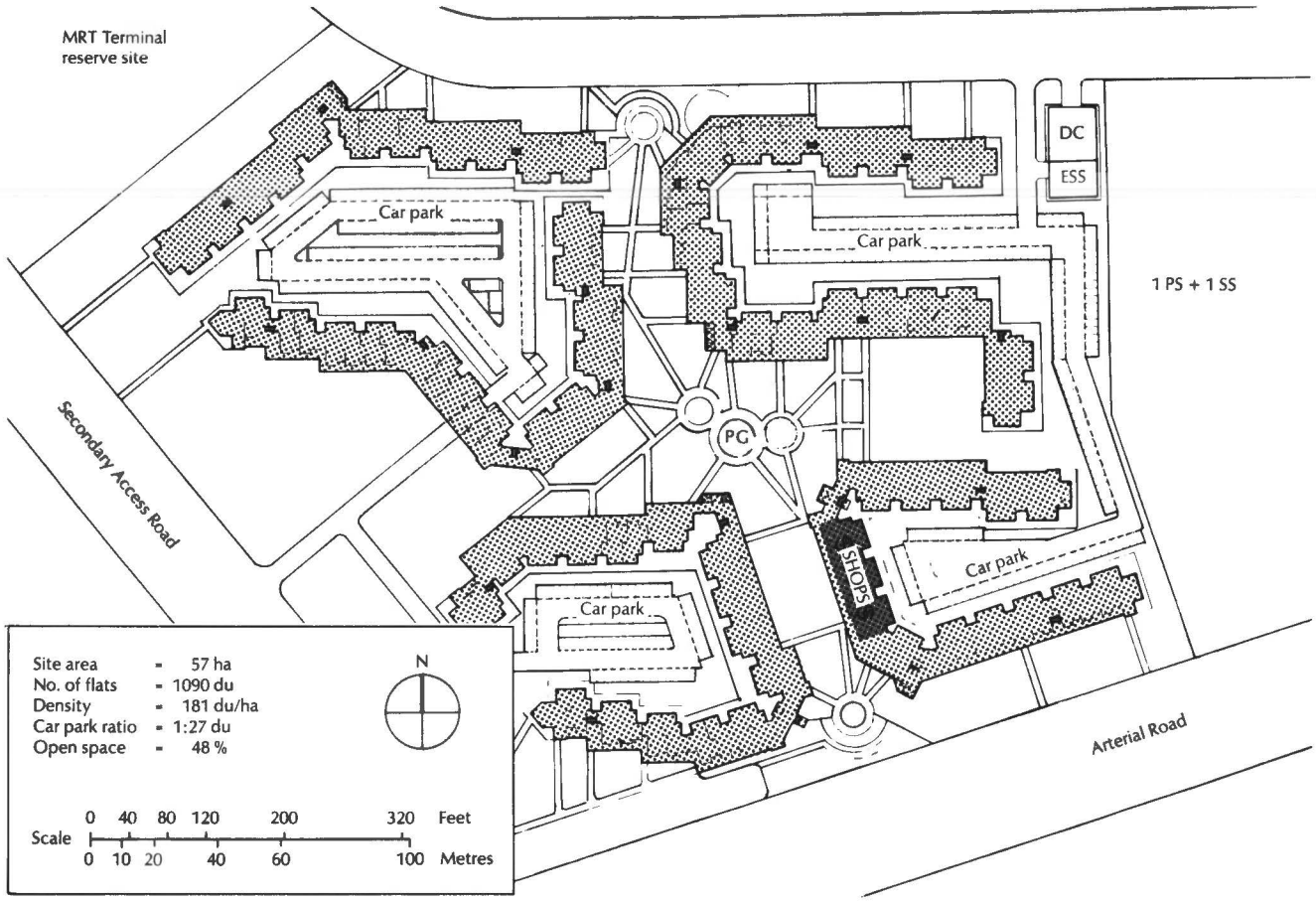


Fig. 5. Precinct layout plan for Tampines.

sibilities of building their own community and improving their living environment. The ready acceptance of high-rise living in public estates has greatly facilitated the education process. Although pre-removal education programs for prospective residents do not assume much importance, post-removal education is, however, essential so that residents are able to partake in the use and management of their units and estate environment.

When the new tenant or lessee collects the keys to the flat at the Sales and Lettings Section, they are given a copy of the "Residents' Handbook." This book contains virtually all the information the new resident needs to know to promote happy community living. It lists all the facilities and services that are available, and provides guidelines to help organize moving in — from getting utilities supplied to the renovation of the flat, and making rent and instalment payments.

As soon as the new tenant moves into the flat, the housing and maintenance inspector from the area office pays a visit, at which time the residents are further advised of the facilities and services available in the neighbourhood. The inspector attempts to get to know the new residents and makes himself available for consultation on any problems. He also tries to introduce neighbours to each other. Such efforts often go a long way to help the new residents acquire a sense of familiarity with the people and the estate, which is essential for the generation of community sentiments. The visit also helps to build rapport and establish an easy and effective channel of communication between the Board and its residents.

To further foster a closer communication on issues of common interest and to help establish a common identity amongst residents, the Board publishes a bimonthly magazine, "Our Home," which is distributed free to all HDB households.

Resident education is an on-going process. At periodic intervals, area offices, together with the residents' committees and other community organizations, carry out educational campaigns such as "Keep the Estates Clean," "Anti-Vandalism," and "Safety in the Estates," through which to educate and remind the residents of their social responsibilities.

Area offices also initiate regular mass cleaning campaigns where the residents, together with the community leaders and the staff of the area office, clean up their apartment blocks. Involvement and participation are effective ways of changing a person's attitude and habits. They help bring about a sense of belonging and pride in the living environment.

Resident education not only covers the adult resident population but also extends to the children as well. Children are actively involved in the educational and cleaning campaigns. Good social habits are to be inculcated from a young age. Towards this end, the area offices also maintain a close liaison with the schools in the estate. From time to time, talks and films on the importance of maintaining a clean and healthy environment are organized jointly with the schools and the Ministry of Environment at school assemblies.

Resident Organization and Community Relations

The government has initiated recently a residents' committee scheme to organize residents into committees. The committees are voluntary organizations run for and by residents living in housing estates. Each com-

mittee serves a zone of 500 to 1000 units depending on the geographical boundary and mixture of flats. The long-term objective is to encourage residents to organize themselves in improving their physical environment and to foster a community spirit. It also serves as a useful channel of communication between the residents and public authorities. The concept was mooted in 1978 and, by the end of 1980, there was a total of 190 residents' committees in the various housing estates. This scheme is administered by the Prime Minister's Office and is not run by the Board.

In recognition of its objectives and potentialities, participation in the management and the maintenance of the physical environment by the residents' committees will be actively encouraged. The commitment of the residents to the care and improvement of their environment is essential in creating an identity of community spirit and attachment. The HDB is prepared to share the management responsibilities with the residents and delegate proper and adequate authority to them without undermining its own role.

One of the tasks ahead is to assist the government in strengthening the community ties in housing estates, but this task of realizing better community relations is not an easy one, and is beyond the competency of one agency. HDB input can only be part of a bigger whole.

As a preliminary step, premises were let at economic rentals to social voluntary organizations that establish outreach programs in the estate to assist the delinquents, the aged, and the poor. In community facilities, there are so far completed 130 kindergartens, 50 community halls, and 15 homes for the aged.

For residents who are in hardship, the Board helps them by referring them to the appropriate agency. Tenants facing economic hardship are given a sympathetic hearing by management staff and referred to the Department of Social Welfare or other charity organizations for assistance. Assistance by the Board is also offered in the form of transfer to lower-rental premises. In some cases, the Board may even help a resident find a job in the estate.

The Board liaises closely with various social welfare agencies, community organizations, and other public bodies to help its residents with their problems. Also, a social awareness course was recently conducted in conjunction with the government's Social Welfare Department to prepare the management staff with an understanding of the social environment. This training improves their management skills in their work with the residents and in administering referrals to the various social welfare agencies on behalf of the residents in need of such help. Further seminars, courses, and talks by specialists in this field will be organized to acquire more skills and to sharpen thinking.

Prospects for the Future

The vision in the next decade is clear. There is a gradual but necessary shift in the HDB's focus from mere housing construction to management with emphasis on the social awareness. Therefore, the fundamental issue in the management of future new towns is the redefinition of the scope of estate management. In other words, what is the role of the Estates and

Lands Division in the management of the social affairs of our residents?

The opportunity for social engineering in the creation of planned communities is wide open. However, the HDB is mindful of the increasing complexity of the social aspect of estate management and the dilemmas to be resolved, for overenthusiastic intrusions in the social domain of the residents may carry with them connotations of paternalism and regimentation. Therefore, the call for increased managerial expertise, careful labour planning, and continuous research in the long-term program is imperative.

Social management as a new aspect of housing management is gaining recognition in many areas of the world. There are no particular sets of solutions for all problems as estate management is an ever-changing and ever-challenging process. Despite these seemingly insurmountable obstacles, the 20 years of experience in housing management provides much impetus and confidence with which to forge ahead to meet the objectives.

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Low-Cost Housing in Malaysia: A Review of Public Sector Involvement

Tan Soo Hai

The post-Independence period in Malaysia has seen much economic progress accompanied by a rise in the general living standards of the population and a corresponding increase in the demand for goods and services, one of which is housing.

The demand for housing in the urban areas far outstrips supply. Natural population increase combined with in-migration from the rural areas has imposed a tremendous strain on existing housing facilities in the towns. Meanwhile the production of new dwellings is slow and fraught with difficulties and constraints. Scarcity of suitable residential land, competing land uses in the urban areas, shortage of building materials, lack of skilled construction labour, and lengthy bureaucratic procedures in obtaining approval for housing development are among the many problems confronting the housing industry.

As a result of these difficulties, house prices have escalated and are now extremely high. A detached house in a prime sector of the capital city can fetch more than M$300 000 (US$136 000). Between 1978 and 1979, the market prices of all properties rose by 15 to 20%, but in 1980, they increased between 30 to 60% (Government of Malaysia, Ministry of Finance 1979).

Under such circumstances, not all income groups will benefit to the same degree from increased development of housing. Low-income people, in particular, will find it almost impossible to purchase houses offered by private developers, and the majority of them, apart from the popular sector, will have to rely on the public sector for housing. The direct participation of the public sector in providing low-cost housing offers the low-income groups access to shelter at subsidized rates and gives them security of tenure. An examination of the public sector's involvement in low-cost housing would indicate the extent to which the Malaysian government has committed itself to housing the country's urban poor.

This paper examines the Malaysian government's efforts in the provision of low-cost housing, and reviews the policy adopted and measures undertaken in housing since Independence, specifically low-cost housing. It also outlines the strategies put forward by the government to improve the housing situation. The term "efforts" used in this paper refers to the government policy measures and actual participation in the provision of low-cost housing.

Public Agencies Involved in Low-Cost Housing

There are some 60 public agencies involved in implementing different

housing programs in Malaysia. However, low-cost housing is mainly supplied by: State Development Corporations (SDCs), Council of Trust for the Indigenous People (MARA), Municipalities, Urban Development Authority (UDA), Federal Land Development Authority (FELDA), Federal Land Consolidated and Rehabitation Authority (FELCRA), Pahang Tenggara Development Authority (DARA), and Johore Tenggara Development Authority (KEJORA). Except for the SDCs and UDA, which are more concerned with housing in the urban areas, the remaining agencies are concerned with low-cost housing in the rural areas.

State Development Corporations

These corporations undertake housing schemes that are financed by soft loans from the federal government through the state governments. Loans are repaid from rents and repayments received from purchasers or tenants. Houses built vary from low-cost terrace through medium-cost, semi-detached, or detached houses to flats (Tan and Hamzah 1979, p. 32–33). The corporations also help to develop Malay reservation lands so as to improve the living condition of the people there.

Council of Trust for the Indigenous People (Majlis Amanah Raayat)

Starting in 1967, MARA has provided loans to low-income groups in the rural areas. The receiver of a loan is also supplied with building materials, and has to prepare the ground and build the house himself or hire others to do it for him. Under the Second Malaysia Plan period (1971–1975), 325 houses were built in this way.

Federal Land Development Authority

This authority builds timber houses in the rural areas for agricultural settlers who are allocated 8 to 10 acres of land (3.2–4.0 ha). As soon as the infrastructure is ready and the rubber or oil palm trees are planted, they settle in and maintain them. When production commences 5 to 7 years later, they will repay the loan at 6.25% interest over a period of 15 to 20 years. From 1971 to 1975, FELDA spent about M$24.2 (US$11) million to construct 15 877 timber housing units for settlers in its land schemes (Third Malaysian Plan, p. 333).

Municipalities (High-Rise and Medium-Rise Flats)

The City Hall of Kuala Lumpur supplies low-cost housing to the city's poor and to the squatters. Under the Second Malaysia Plan (1971–1975), the major projects completed include the Circular Road Flats, the Cheras Road Flats, the Sungei Besi Road Flats, the Loke Yew Road/Shaw Road Flats, and the Kampung Pandan Timber Housing Project. These projects consisted of dwelling units and 188 shops, costing M$47 165 240 (US$21 438 745) (Tan and Hamzah 1979).

Penang City Council, Ipoh Municipality, and the Malacca Municipality have also built low-cost housing with their own funds (Third Malaysian Plan, p. 32).

Urban Development Authority

UDA was set up in 1971 as an agency whose role includes the modernization of the Malay and other indigenous people by a process of urbanization and industrialization. Financial facilities such as concession in selling prices of houses and soft loans are provided. The houses built vary from housing for workers to bungalows for high-income groups.

Housing Policy and Development of Public Low-Cost Housing: A Review of Past Performance

Housing is treated as a residual policy in development planning (Kamal 1976, p. 8). Allocations in all the 5-year development plans were not more than 3% of total development expenditures. Seemingly, public policy is geared more to raising income levels and yet housing is an integral part of development. The absence of a comprehensive approach incorporating housing into the social and economic objectives of development has resulted in ad hoc measures to deal with the housing problems over the years. Partly because of the absence of a comprehensive approach, house prices have been escalating, and the construction industry itself is faced with problems of shortages and limited capacity. The most important area of concern is low-cost housing because, in a situation of rising demand and inadequate supply, it is inevitable that the supply of low-cost housing would suffer due to ineffective demand. Thus, public intervention is necessary to ensure that the poor are not left out.

Housing Trust

Attempts at low-cost housing by the public sector began with the setting up of the Housing Trust in 1950. The Housing Trust came into operation in 1952 when it served as a federal agency, providing technical and supervisory services to the state governments in undertaking low-cost housing. In 1957, the Trust began to play a more active role in the provision of housing — constructing low-cost houses for the state governments, which provide the land on nominal terms, and building infrastructure services such as roads and water supply.

Between 1953 and 1957, the Trust built 1496 houses but from 1967 to 1975 it built 17 573 units. In 1973, the Trust was run down and finally dissolved at the end of 1975. With its dissolution, low-cost housing came directly under the responsibility of the state governments.

Public Low-Cost Housing Between the Period 1970–1975

The Second Malaysia Plan (SMP) (1971–1975) constituted a trial period whereby the state governments were given the task of developing their own development capacity to cope with the housing needs. No specific targets were set for each state but the overall expected construction for all the states combined would reach 5200 units per year.

However, with the reduced role of the Housing Trust and inflation around 1972, the states were not particularly active. By the end of the SMP,

Table 1. Federal housing loans for low-cost housing (1956–1975).

Development plan	Loan (million M$)	Actual expenditure (million M$)	Units constructed
1956–1960	10	9.33	2983
1961–1965	45	33.27	7568
1966–1970	188	99.79	22 522
1971–1975	239.97	234.80	13 244

Sources: Tan and Hamzah (1979); Third Malaysia Plan, p. 333.

all the states combined had managed to build only 13 244, or about 50%, of their target of 26 241 units (West Malaysia only). Out of these achievements, three states, namely Selangor, Johore, and Pahang, contributed the most toward public-housing production.

Loan provision for public housing was first allocated under the 1956–1960 development plan and it has appeared in every subsequent development plan. Table 1 shows that the loan allocated has not been used up by the state governments. The low volume of public-housing construction vis-à-vis the many expanding urban centres indicated that greater effort should have been made to provide public housing in the urban areas.

Under the First Malaysia Plan (1966–1970), the construction of low-cost terrace houses on dispersed sites adjacent to the small towns was complemented by the construction of high-rise, low-cost flats in the federal and state capitals. The flats were constructed using industrial techniques imported from developed countries. Eventually these techniques were abandoned when they were found to have no advantages over conventional methods (Thalha 1979, p. 51).

The SMP de-emphasized public housing with a lower allocation (M$98 (US$44.5) million) and a smaller target of 14 500 units, which was not achieved by the end of 1975.

Public-Sector Involvement in Housing under the Third Malaysia Plan

The government first announced the concept of a house-owning democracy in 1961 (Government of Malaysia, Ministry of Housing and Local Government 1976, p. 3). The introduction of this concept had a significant effect on housing demand as more Malaysians became increasingly aware of the importance of owning houses. During the Third Malaysia Plan (TMP) (1976–1980), the government pursued the social objective of creating a house-owning democracy. Improving living standards and undertaking more land schemes in the rural areas have been emphasized with the intention of slowing down the urban–rural migration, i.e., relieving the housing facilities in the urban areas from the strains of sheltering the increasing urban population.

The TMP stated that the government would concentrate its efforts on low-cost housing and that the supply of housing for the middle- and higher-income groups would continue to come from the private developers. To enable the poor in the urban areas to gain access to proper housing, the government would undertake the following measures: firstly, joint efforts together with the private sectors in the construction of low-cost units within the price range of M$5000-7000 (US$2273-3182) each; secondly, sites and services projects in urban areas as an immediate measure for the rehousing of squatter families; and thirdly, squatter improve-

ment schemes through the provision of basic services and facilities within the neighbourhood.

The estimated housing needs under the TMP were 515 000 units, but the TMP set a target of 482 800 units for both the public and private sectors. Of these, the public sector would build 220 800 units, of which more than 58.5% were for the lower-income groups. Performance of the public sector in housing during the TMP is shown in Table 2. Of a target of 73 506 units, the public low-cost housing program achieved only 39.0% by the end of the TMP, which means that the remaining 61.0% has to be brought forward into the Fourth Malaysia Plan.

At the same time, the government introduced measures aimed at reducing costs and prices of dwelling units to bring them within reach of low-income households. Some of the measures included curbing real-estate speculation, facilitating land conversion for residential use, speedy processing of building plans, modification of standards for infrastructure and building, increasing the supply of essential building materials, and promoting research into cost-reducing methods of construction. Higher-density construction coupled with the reduction of interior living space and economizing on the quality of finish and building materials were to be allowed for low-cost housing.

The TMP placed greater emphasis on low-cost housing. A total of M$2.5 (US$1.14) billion was allocated for public housing and staff quarters, a threefold increase over similar allocations for the SMP. To encourage the development of public low-cost housing, an allocation of M$720 (US$327) million was made under the TMP.

During the period of the TMP, the government introduced several promotional incentives for the housing industry (Third Malaysia Plan, p. 214). They included, in 1977, a revision of lending terms to 4.0% per annum and repayment period extended to 20 years for loans extended to state governments for low-cost housing. In 1978, the repayment period was further extended to 25 years. Secondly, a revolving fund of M$5 (US$2.3) million in each state in 1978 was established to speed up implementation of low-cost housing projects. Thirdly, a further revolving fund of M$10 (US$4.5) million was set up in the Ministry of Housing and Local Government to provide loans up to M$7500 (US$3401) at 5.5% interest rate repayable within 25 years. The scheme caters to individual Malaysians owning small lots within

Table 2. Performance of public sector in housing (1976 – 1980).

Program	Target	31/12/1980 Total units completed	%
Public low-cost housing schemes	73 506	28 689	39.0
Federal agencies and regional development authority housing programs	52 493	34 691	66.1
Government staff accommodation	58 143	30 329	52.2
Sarawak and Sabah land development boards and Jabatan Orang Asli	11 085	3689	33.3
SEDC's housing projects and other minor housing programs	41 600	26 815	64.5
	236 827	124 213	51.5

Source: Ministry of Housing and Local Government (unpublished, February 1981).

a certain radius of an industrial estate, residents of new villages, estate and mine workers, and squatters directly affected by development projects. Finally, in 1976, the government introduced guidelines to commercial banks and finance companies to ensure that adequate financing on reasonable terms was available to house buyers. The interest rate for loans not exceeding M$100 000 (US$45 454) was fixed at 9%/year or 1.5%/year above the prime rate.

Housing Problems in Malaysia

Despite the government's efforts to increase the supply of housing through these incentives, the housing industry faces numerous problems that hinder the attainment of the targets set out under the TMP and the mid-term review of the TMP.

Demand and Supply

During the last 5 years, the demand for housing in the country has increased much more rapidly than supply. Several factors contributed to the high demand. First, there has been a favourable economic climate, resulting from higher commodity prices and higher export earnings, which helps to push up income levels. Secondly, to facilitate the purchasers in buying houses, the government has made rulings through the Central Bank (Bank Negara), which stipulated, in 1977, that local financial institutions should allocate easier mortgage loans to house buyers at an interest rate of 9%/year for loans not exceeding M$100 000 (US$45 454) (Third Malaysia Plan, Mid-Term Review, p. 215). Thirdly, greater publicity for the house-ownership policy stimulated by the public sector and private developers' involvement in housing has been achieved. This has aroused a chain reaction in the middle-class group who are strongly attracted by the loan policy and the opportunities for property ownership. Fourthly, the housing backlog has been accumulating for many years in the urban areas. The situation is exacerbated by rural–urban migration. In the Federal Territory, the estimated annual population growth is 7% compared to a national increase in population of 2.6%/year (New Straits Times, July 11, 1979). Fifthly, from 1931–1970, the number of persons per occupied house increased from 4.8 to 6.1 persons per house. The 1970 Housing Census data also revealed that 38.7% of the housing stock in Peninsular Malaysia had an occupancy rate of more than three persons per room,[1] indicating a high pressure on existing housing conditions and the need to improve them. Finally, the breakdown of the traditional extended families into nuclear families has been taking place rapidly and thus helps boost the demand for urban housing.

Supply of Low-Cost Housing

Of the total of M$2.5 (US$1.14) billion allocated for public housing and staff quarters, M$720 (US$327) million was for the construction of 129 400 low-cost units (Third Malaysia Plan, p. 340). By the end of 1978, of the

[1]Three persons per room is the criterion adopted by the United Nations for purposes of international comparisons.

Table 3. Public- and private-sector housing program, the Third Malaysia Plan (1976 – 1980).

Types of housing program	Unit target under the TMP	Situation on 30/6/1980				Units to be completed by 31/12/1980	
		Completed	(%)	Under construction	(%)	Total units	(%)
Public sector							
Public low-cost housing schemes	73 506	20 757	28.2	18 484	25.1	28 689	49.4
Federal agencies and regional development authority housing programs	52 493	30 991	59.0	12 830	24.4	34 691	66.1
Government staff accommodation	58 143	25 249	43.4	10 988	18.9	30 329	52.2
Sarawak and Sabah land development boards and Jabatan Orang Asli	11 085	2947	26.6	841	7.6	3689	33.3
SEDC's housing projects and other minor housing programs	46 100	21 662	47.0	20 447	44.4	26 815	58.2
Sub-total	241 327	101 606	42.1	63 590	26.4	124 213	51.4
Private sector							
Private developers	150 000	166 200	110.8	33 291	22.2	199 491	133.0
Cooperative societies	12 000	3739	31.2	915	7.6	4950	41.3
Individuals and groups	150 000	68 400	45.6	7600	5.1	76 000	50.7
Sub-total	312 000	238 339	76.4	41 806	13.4	280 441	89.9
TOTAL	553 327	339 945	61.4	105 396	19.1	404 654	73.1

Source: Ministry of Housing and Local Government, Malaysia (unpublished, February 1981).

195 634 units completed, the public sector had built 65 936 units. The construction of low-cost housing was unsatisfactory due to "inadequate capacity, protracted process in obtaining suitable land and delay in providing complementary infrastructure" (Third Malaysia Plan, Mid-Term Review, p. 211; see also Table 3).

The scarcity of suitable land and inadequate supply of cheap housing are manifested in the large number of squatters now living on public land. For example, in the Federal Territory, only 6% of the public land remains unoccupied, although not all of this occupied area is undertaken legally. In terms of public performance in housing, until September 1979, only about one-fifth of the target of 15 700 low-cost housing units had been completed in the capital city (New Straits Times, September 16, 1979).

The Ministry of Housing and Local Government (1979) has estimated that, between 1981 and 1985, a total of 438 220 new dwellings will be required to satisfy the need for urban housing, given that there will be 387 200 new households in the urban areas. These new dwellings represent an increase of 54% over the estimated 1980 housing stock. Of these urban housing needs, an estimated 56% is from the low-income group, which means that 245 640 low-cost units are required over the next 5 years.

Low-Cost Housing and Ability to Pay of the Low-Income Group

Low-cost housing in Malaysia can be defined as the appropriate housing units of which the construction is in accordance with identified minimum standards complying to a code of practice specially created for low-cost

houses. The rentals and the selling prices of these units should be within the financial capabilities of the prospective users or buyers (Wang 1980).

There are five types of low-cost public housing in Malaysia: Malay timber housing built on the periphery of urban areas and in the rural areas; row houses built of conventional building materials; fishermen's houses built on the coast; four- or five-storey medium-rise flats; and high-rise flats.

In general, the cost of the cheapest type of urban housing ranges from M$12 000 (US$5454) to 20 000 (US$9090) depending on the site area and the building materials used.

Based on the 1976 Agricultural Census, 58.7% of the urban households earned less than M$600 (US$273)/month, and of these, many earned less than M$300 (US$136) monthly. With the escalating price of basic commodities over the last few years, the urban poor's ability to pay has not increased in real terms (report of Malaysian Organisation for Human Settlements on Housing, unpublished 1980, p. 18). As a result, the distribution of flats in urban areas tends to favour higher-income groups (Agrawal, unpublished data). In fact, in 1976, households earning less than M$400 (US$182)/month, or some 70% of the urban population, could not afford to purchase or rent most of the housing units constructed by the various housing agencies (Third Malaysia Plan, p. 339).

Manpower for Housing Construction

Employment opportunities in the construction sector are increasing due to its increased activities. In 1979, 15 100 new jobs were created in this sector.

The strong growth in this sector is due to increased public emphasis on the construction of low-cost housing for lower-income groups and by the construction activity of the private sector (Government of Malaysia, Ministry of Finance 1980). Meanwhile, the increasing demand for construction workers also takes place in other countries where foreign skilled workers are welcomed. There has been an outflow of construction workers from Malaysia to Singapore over the last few years.

The labour shortage in the construction sector not only adds additional cost to the construction work but also slows down the completion of housing projects.

Building Materials

A large proportion of building materials is produced locally. To control the building cost, the government has, for a number of years, been imposing strict price control on local building materials. There was an artificial shortage in 1976 due to the sudden rapid rate of growth in the construction activities (Government of Malaysia, Ministry of Housing and Local Government 1980). At present, the housing industry has to compete with the commercial and industrial sectors for limited building materials (Malaysian Organisation for Human Settlements, p. 18). Meanwhile, the policy to restrict the import of important building materials from foreign countries, which is aimed at protecting local industry, has compelled contractors to pay higher prices for the building materials they use.

Locally produced building materials, in particular steel and cement, are expected to reach an adequate level by 1982 when the new and expanded

plants begin production. The present shortage can be minimized with a better network of distribution and with a better policy of price control and by allowing imported building materials to supplement the local supply.

Land Scarcity in Urban Areas

As a consequence of development in some Malaysian towns, demographic concentration is rapidly taking up the most feasible development areas. Land as a commodity has been eagerly and constantly sought after for speculation.

In the Federal Territory, this problem is being aggravated by the massive occupation of public land by squatters. Of the total 60 160 acres (24 346 ha) of land in the capital, only 1.7% of the total area is not yet used (New Straits Times, June 17, 1980). The high cost of land is now the main problem facing both the public and private sector in the building of urban low-cost housing.

Bureaucratic Procedures

The recent active housing development throughout the country has increased the workload of related government departments. Shortage of staff is one problem. Lengthy and complicated procedures constitute the other factor leading to delay in approval of plans.

In the Federal Territory, each housing project has to go through 40 stages, taking generally 2 to 5 years to be approved.

In each state, there are about 10 agencies through which land and housing developers have to apply for approval. The procedure involves numerous departments such as Drainage and Irrigation, Public Works, the National Electricity Board, Telecommunications, Agriculture and Fisheries, Education, Health, Mines, and Labour. Furthermore, the federal office, the local authority, and the municipal or district councils are also involved in the decision-making process for housing (National Consultative Council on Housing 1980). In short, the whole process is very time consuming, resulting not only in wastage of time but also in unnecessary additional cost to housing development.

Toward a Progressive Strategy

As far as the provision of urban low-cost housing is concerned, the result has been unsatisfactory. At an estimated annual growth rate of 5.2%, the urban population is expected to grow from 3.3 million in 1970 to 7.2 million in 1985 (Government of Malaysia, Ministry of Housing and Local Government 1979, p. 30). By then, the proportion of urban population will be 44% as compared to 30% in 1970. At the same time, the number of urban poor is expected to grow, and would have to find their own means of housing in accordance with their own means if public measures are not effective enough to cope with their problems. This could either be spontaneous or through numerical expansion of the existing poor urban sectors.

In view of these consequences, the government is working towards a progressive housing strategy in which the welfare of the low-income group could be improved in the long run through better housing facilities.

National Housing Consultative Council and Low-Cost Housing

The National Consultative Council on Housing was set up in 1971 by the

federal government. Its role is to "advise the Government on measures for housing developments of reasonable scale and quality with emphasis on the lower income groups and to establish self-contained housing complexes incorporating essential community services designed for integrated multi-racial communities in the promotion of national unity" (Tan and Hamzah 1979, p. 65). However, the Council did not play an effective role until early 1980 when the Ministry of Housing and Local Government revised its role to make it an important part of the machinery in implementing the home-ownership policy. The following are its main tasks: to assist in preparing housing programs and implementing them; to find out effective methods in the delivery of building materials; to evaluate and study the planning and design of layout plans including provision of social facilities; and to identify housing problems and suggest recommendations and act as a bridging channel between the ministry concerned and the private sector in implementing the national housing policy.

With this Council acting as an "inspector" in the national housing building process, the coordination between different departments could be much improved in the future.

Towards Modification of Planning and Infrastructure Standards

Given that their effective demand is extremely limited in the open market, low-income people are the "spectators" of the current rush for private housing.

From 1972 to 1979, the price of a double-storey terrace house increased by four times in the Federal Territory (Government of Malaysia, Ministry of Finance 1979, p. 167). Other major towns such as Penang experienced a similar phenomenon.

In view of the rise in building costs and land value, the time has come for the government to take a decision on either having higher standard housing for a few or allowing lower standards to cater to many by matching the house prices with their affordability.[2] Some amendments will have to be made to the existing building and planning bylaws to encourage higher-density construction, smaller interior living space, and economizing on the quality of finish and building materials by using cheap local materials. Nevertheless, minimum standards concerning basic amenities and facilities such as electricity, piped water supply, access roads, sewerage, and drainage must be maintained to ensure that the low-cost houses will meet the basic requirements.[3]

Prefabrication and Industrial System

The total housing target is one million units for the Fourth Malaysia Plan (New Straits Times, July 2, 1980). Of these, 440 000 units will be constructed by the public sector. Greater supply in low-cost housing will help to reduce pressures on housing prices arising from heavy demand. However, it is doubtful whether the conventional building method can achieve the target.

The main problem in applying the industrialized system is that it is highly

[2]Until recently, only 1 out of 10 applicants was able to get a low-cost house throughout the country (New Straits Times, June 19, 1980).

[3]The new uniform building bylaw, still in draft form, proposes that the minimum floor space per housing unit be 400 ft^2.

capital intensive and quantity bound, with other problems like transporting precast units to the construction site and contract matters. Furthermore, the building cost of the Penang Rifle Range Project, which used a prefabrication system, was found to be 5 to 8% higher than the housing units built by conventional methods (Tan and Hamzah 1979, p. 115).

Despite this, in the long run, when the pace of urbanization and mechanization in building techniques accelerates, the use of the prefabrication and industrial system will have to be extended to play a more important role in the housing industry. This is particularly true when land and skilled labour are scarce for residential development. There are also several advantages in building medium- and high-rise projects by applying this method in the urban areas. Firstly, better use of land can be achieved, thus relieving part of the problem of land shortage. Secondly, a faster and more efficient method of housing production will reduce the backlog accumulating over the last 15 years. Thirdly, higher concentration of inhabitants in residential areas tends to encourage the public or private sector to provide better public transportation facilities and services to the low-income groups.

Establishment of a Larger Revolving Fund

At present, the state governments receive loans for low-cost housing from the federal government at 4% interest. These loans are redirected to Employees Provident Fund contributors whose household monthly income does not exceed M$500 (US$227),[4] with 5.5% interest repayable over 25 years, to purchase low-cost housing units.

Moreover, a M$10 (US$4.5) million revolving fund has been set up in the National Housing Department to provide loans of up to M$7500 (US$3401) to low-income people under the same conditions as mentioned above (Third Malaysian Plan, Mid-Term Review, p. 214). Generally the loan is for building houses on land owned by rural or semi-urban people. To meet the housing demand of the poorer people, it is important that this fund be enlarged to enable more people to benefit from it.

Recently, the Malaysian Building Society Berhad was allocated M$400 (US$182) million to finance low-cost houses built by the public or private sector. These houses should cost between M$12 000 (US$5454) and 20 000 (US$9090). The Central Bank supplies two-thirds of this fund at 2.5% interest whereas the remainder comes from the Employees Provident Fund at 7%. The money is loaned out at 5.5% interest for a repayable period of 20 years.

Lately, the government has agreed to increase the revolving fund to each state for low-cost housing to a total of M$260 (US$118) million (The Malay Mail, October 22, 1980).

Housing for Industrial Workers

The public sector has been providing housing for its employees (Third Malaysian Plan, p. 335). However, the welfare of the industrial workers should be considered because they play an increasing role in the national economy.

[4]M$500 (US$227) for Peninsular Malaysia and M$700 (US$318) for Sabah and Sarawak.

As the industrial development goes on, the number of industrial workers will increase accordingly. It is therefore important for the government to promote more joint-venture schemes with industrial entrepreneurs in the provision of low-cost housing for the workers with or without families.

Sites and Services Proposal and its Problems of Implementation in Urban Areas

The provision of sites and services has been emphasized by some international bodies as a complementary solution to low-cost housing construction in the Third World. From 1965 to 1971, nine sites and services projects comprising 7630 plots were carried out by the Selangor state government to resettle squatters in Kuala Lumpur (Business Times, August 29, 1979).

The Salak South sites and services project[5] in the Federal Territory, partly financed by the World Bank, did not produce an encouraging result and the participants' response was not as positive as had been expected.

Several factors may account for the lukewarm response. Firstly, support facilities were lacking, resulting in the slow provision of access roads, drainage systems, and water supply (Amato 1979, p. 389). Officials fear that the area would develop into an urban slum. Secondly, there was a lack of a cheap and regular transport system and other community facilities because the site was located too far away from the city centre. Thirdly, organizational problems, such as the lack of construction skills among the occupants and the fact that building materials had to be bought by the occupants individually, affected the implementation of the program.

The Salak South Project planners may have thought that they have provided an "alternative to further squatting by permitting households to gain title to land and certain residential stability through tenure security" (Amato 1979, p. 385) but the problems associated with the scheme have raised questions on whether it is indeed a suitable approach for Malaysia!

Better Efficiency to Implement Housing Schemes

To shorten and eliminate red tape and corruption, the government has proposed the setting up of a task force (New Straits Times, May 24, 1980). Once the task force is established and implemented by the government, developers will be able to apply directly to the Director of Lands and Mines in their respective state for land conversion matters. Every application for housing land would be decided within 6 months. This is indeed a positive step towards easing the current shortcomings in the process of housing supply.

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[5]More than 300 squatter families had to be relocated due to the construction of the Kuala Lumpur – Seremban Highway, started in 1975. Temporary housing was then provided by City Hall of the Federal Territory while a pilot sites and services project was undertaken nearby where public land was leveled and subdivided into small lots. The affected families were provided with a core house to which they added other components to make a complete house. The core house cost M$7500 (US$3401). When the 10% down payment was paid, the rest could be borrowed from the Malaysian Building Society Bhd. at 5.5% interest, repayable over a period of 15 years.

Improvement in the Supply of Construction Workers

In 1979, the three training agencies, MARA, Industrial Training Institute, and Dusun Tua, supplied only 454 trained construction workers, whereas 18 600 new jobs were available in the sector in 1980 (Business Times, March 20, 1981). As a remedial measure to labour shortage, the government is taking initiatives to encourage developers to carry out on-the-spot training schemes. Under these schemes, a trainer employed by the contractor will receive a subsidy of M$23 (US$10.5) per day from the government. The training period is supposed to last about three months (Business Times, March 20, 1981).

Role of Private Developers in Low-Cost Housing

It has been realized that under the Third Malaysia Plan the supply of housing, in particular those from the private developers, is not within reach of the low-income masses (Third Malaysian Plan, p. 335). The demand for residential housing is anticipated to remain strong (Government of Malaysia, Ministry of Finance 1980, p. 131). To help increase the supply of low-cost housing, the private developers are expected to take a bigger part in providing low-cost housing on their own and through joint ventures with the government. This social obligation has become a permanent imposition upon the private developers throughout the country.

Conclusions

The house ownership democracy proclaimed by the government constitutes an economic rationalism of the desire to provide adequate housing to its citizens. The Third Malaysia Plan (p. 338) emphasized that the "benefit of housing should be widely enjoyed by the population irrespective of income," which implies the government's strong will to intervene on a large scale in housing production throughout the country.

The process of redistribution of national wealth by means of public-housing subsidies in favour of the non-property owning populace is indeed an indirect measure to help maintain law and order (New Straits Times, March 28, 1981),[6] which is one of the guarantees for the national economic growth. However, given other national priorities and the existing urban problems, the provision of low-cost housing within the means of low-income people has been very unsatisfactory. Moreover, the construction of private housing for the middle class has unfortunately invited speculative practices, the consequence of which has caused an artificial increase in house prices. Low-income people have suffered in the course of the housing "boom" as their purchasing power for housing has decreased relative to that of 5 years ago.

As in many other Third World countries, urban–rural disparities have created problems in the Malaysian urban areas, such as demographic concentration, urban sprawl, land scarcity, traffic congestion, and squatters.

[6]The capacity of the nation's defence and police force to maintain law and order in the country will be improved in the Fourth Malaysia Plan period.

So far, experience has shown that policies intended to slow down the flow of migrants toward the cities have been ineffective. Unless more-effective measures are implemented to deal with the housing demand of low-income people in the urban areas, the towns will face an intolerably disordered spatial growth.

In Malaysia, the cumulating housing backlog suggests that targets set under the national housing programs have often been too ambitious without the corresponding capacity to fulfill them. However, the Fourth Malaysia Plan (1981 – 1985) will allocate M$1000 (US$455) million for public-housing programs, and has set a target of 266 000 low-cost units over the next 5 years (New Straits Times, March 28, 1981). Compared with the previous 5-year plans, this is the highest target for low-cost housing and shows the Malaysian government's concern over housing, particularly as it affects the poor in the country.

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Low-Income Housing in Malaysia: A Qualitative Evaluation of Alternative Approaches

Tan Soo Hai and Hamzah Sendut

In Malaysia, low-cost housing is provided by the public, the popular, and the private sectors (Agrawal 1978). Although all three sectors are interrelated and complement one another in fulfilling low-income housing needs, the public sector and, more recently, the private sector play a dominant role in the provision of low-cost housing.

Often, in developing countries, the popular sector has been able to match the priorities, needs, and ability-to-pay of low-income groups (Agrawal 1978), but that sector has not been encouraged or accepted as the overall answer to low-income housing problems in Malaysia. Two reasons are usually given. Firstly, urban land is scarce and expensive, and secondly, community and individual participation in house construction does not work in urban areas (Yahya 1980). This explains why the Malaysian government continues to show a strong preference for a more formal approach to low-income housing.

This paper examines the various alternative approaches to low-cost housing in the urban areas of Peninsular Malaysia and evaluates these approaches in terms of the quality of the environment. It focuses on the approaches provided by the formal sector. Numerous attempts have been made to improve on the designs of high-rise, high-density; medium-rise, medium-density; and low-rise, medium-density housing by adjusting the cost and density factors. Such attempts affect the quality of the environment. To reach an understanding of the various formal approaches to low-cost housing in Malaysia, this paper seeks to demonstrate the relationships between the quality of the environment, cost, and density.

Method of Evaluation

Selected Case Studies

Because of time constraints and the coverage of the study area, it was not possible to study as many low-cost housing schemes as desired. Therefore, for this study, 10 low-cost housing schemes were chosen (Table 1).

Determination of Weights

The various aspects of the four components of the physical environment in house-building design, i.e., circulation, community facilities, open

Table 1. Selected examples of low-cost housing approaches in Peninsular Malaysia.

High-rise, high-density	Medium-rise, medium-density	Low-rise, medium-density
Jalan Pekeliling, Kuala Lumpur (17 storeys)	Jalan Cheras,[a] Kuala Lumpur (4 storeys)	Cluster-link housing, Jalan Cheras,[a] Kuala Lumpur
Jalan Rifle Range,[a] Penang (17–18 storeys)	Bandar Bayan Baru, Penang (5 storeys)	Cluster-link housing, Setapak Jaya,[a] Kuala Lumpur
Kampung Melayu,[a] Penang (16 storeys)	Bukit Bangsar,[a] Kuala Lumpur (4 storeys)	Bandar Bayan Baru, Quadrant housing, Penang
Noordin Street Ghaut,[a] Penang (17 storeys)	Jalan Trengganu, Penang (4 storeys)	Reduced frontage double-storey terrace house, Ipoh Garden, Ipoh
	Datuk Keramat,[a] Kuala Lumpur (4 storeys)	
Jalan Loke Yew, Kuala Lumpur (20 storeys)	Section 17, Petaling Jaya (4 storeys)	Reduced frontage double-storey terrace house, Seri Petaling,[a] Selangor
Jalan Shaw, Kuala Lumpur (17 storeys)	Jalan Sungei Besi, Kuala Lumpur (4 storeys)	Reduced frontage double-storey terrace house, Ex-Maha Site, Old Klang Road,[a] Kuala Lumpur
	People's Court Road, Penang (4 storeys)	

[a]Selected as case studies.

spaces, and physical orientation of buildings, are weighted according to their importance and significance. The weights are determined on the basis of existing information and guidelines provided in the literature on low-cost housing in Malaysia, the size of a low-income family, and their preferences. The weights used rank from 1 to 10.

Ranking and Evaluation

The four components of the physical environment are ranked according to their adequacies, which range from very poor, poor, neutral, good, through very good, with values from -2 to $+2$.

Low-Income Target Group

Of urban households in Peninsular Malaysia in 1976, about 59% earned less than M$600 (US$273)/month and about 70% of them earned less than M$800 (US$364)/month (Table 2). As recently as 1978, households earning M$500 (US$227) and below were accepted as the low-income group. This income level was used as one of the criteria for qualification to apply for public low-cost housing.

In 1981, with inflation projected to be 7%/year, and the spiralling prices of houses, the use of a monthly household income of M$500 (US$227) as the demarcation factor between low- and middle-income groups would

Table 2. Income distribution in urban households for Peninsular Malaysia, 1976.

Monthly income (M$)	Urban households (%)
Less than 200	12.0
201–400	27.6
401–600	19.1
601–800	11.3
801–1000	7.2
1001–2000	15.0
2001–3000	4.1
3001–4000	1.6
4001 and above	2.1

Source: Preliminary and unpublished results of the 1976 Agricultural Census (Government of Malaysia, Department of Statistics 1976).

Table 3. Distribution of income and affordable house prices.

Income group (M$)	Affordable amount for housing (monthly) (M$)	Loan terms			Affordable house prices (M$000)
		Proportion finance (%)	Interest rate/ annum (%)	Period (years)	
Less than 200	Less than 30	100	5.5	25	Less than 5
201–400	32–64	100	5.5	25	5.5–10.0
401–600	72–108	100	5.5	25	11.5–17.0
601–800	120–160	90	5.5	20	17.5–25.5

Source: Ministry of Housing and Local Government (1980).

exclude a large proportion of the urban population from the opportunity of owning a home.

The most updated source of information on the patterns of household expenditure is the 1973 Household Expenditure Survey, which showed that it is unlikely for the low-income group to spend more than 20% of their monthly income on housing. For those who earn less than M$600 (US$273)/month, the percentage allocated to housing usually lies between 15 and 18% of their income. Matching the ability-to-pay with the terms of loans for available housing, the relationship between the distribution of income and appropriate house prices is shown in Table 3.

For those in the low-income groups who earn less than M$400 (US$182), they can afford houses costing M$10 000 (US$4545) each and below. For those who earn between M$400 (US$182) and 800 (US$364)/month, the price of houses they can afford ranges from M$11 500 (US$5227) to 25 500 (US$11590). For this reason most state governments have imposed a maximum limit of M$20 000 (US$9090) on the selling price of a low-cost house developed by private developers (Third Malaysia Plan, p. 339).

Alternative Approaches to Urban Low-Cost Housing

Low-cost housing approaches that are common in the urban areas throughout Peninsular Malaysia can be grouped according to the number of storeys and their gross residential density. Basically, they are categorized into high-rise, high-density; medium-rise, medium-density; and low-rise, medium-density. Medium-density housing can be further subdivided into low-medium density and high-medium density (Table 4).

Table 4. Urban housing density criteria.

Density	Dwelling units/acre	Persons/acre
Low	8–20	44–110
Medium: low-medium	20–30	110–165
high-medium	30–60	165–330
High	100 and above	550 and above

Sources: Adapted from Standards of City Hall, Kuala Lumpur, and Municipal Council, Georgetown.

Most of these approaches are used by the government in implementing housing programs throughout the country. The emphasis on higher density is understandable because urban land is scarce and has to be put to maximum use.

The Ministry of Housing and Local Government defines high-rise buildings as those requiring lifts. Walk-up flats, with four to six storeys, are regarded as medium-rise buildings.

The selected examples of the different housing approaches commonly used in Malaysia (see Table 1) are by no means exhaustive but do illustrate the extent to which such approaches are used to meet the urban low-income housing needs in the country.

High-Rise, High-Density, Low-Cost Housing

High-rise, high-density, low-cost housing is commonly found in the major urban centres where residential land is scarce and expensive, and the need to maximize the use of land is important. The gross density in the high-rise, high-density areas usually exceeds 100 units per acre.[1] In many urban areas, the average height of high-rise flats is between 17 and 20 storeys. High-rise, high-density flats, mainly used to rehouse squatters, are either for sale or rented. All of them are developed by the public sector and maintenance and administration of the flats continue to be the responsibility of the government agencies concerned.

Occupants of the high-rise flats are mainly within the category of household income that is below M$300 (US$136)/month. Most of the high-rise flat dwellers work close to the centre of the town. They work as hawkers, government servants in the lowest categories, and generally in unskilled and semi-skilled jobs (Abraham 1979).

In the high-rise, high-density schemes, density is often extremely high. In Jalan Pekeliling, Kuala Lumpur, it reaches 800 persons per acre and in the Rifle Range scheme, Penang and Jalan Shaw, Kuala Lumpur, it is as high as 1000 persons per acre.

The length of a block of high-rise flats is usually around 400 feet (122 m), with an average of 24 units per floor or about 400 flats and shops in a 17-storey building. On average, the population on each floor is about 160 persons in the Noordin Street Ghaut and Kampung Melayu Flats in Penang, and the total population per block is 3000–3500 persons (Leong 1979).

In each typical high-rise block, there are two or three lifts per floor, each usually serving around 1000–1150 persons. This shows that most high-rise, high-density flats are "fire risks" because whenever fire breaks out it is likely that somebody is using the lifts.

Studies on high-rise flats have shown that cross ventilation is poor (Leong 1979). This is because each block is about 45–120 feet (13.7–36.6 m)

[1] 1 acre = 0.405 ha; 1 foot = 0.305 m; 1 foot^2 = 0.093 m^2.

apart and air movement at the lower storeys is poor. In the case of Rifle Range Flats, the distance between the blocks is only 45 feet (13.7 m).

High-rise flats have either one or two bedrooms. Three-bedroom types are found in more recently developed models. The average size of a typical one-bedroom flat is about 400 feet^2 (122 m^2) and that of a typical two-bedroom flat is about 500 feet^2 (152.5 m^2). The three-bedroom flat is larger with sizes ranging from 600–800 feet^2 (183–244 m^2).

Each unit has a bedroom (or two), one living-cum-dining room, one bathroom, one kitchen, and one balcony. The balcony is often used as a laundry, washing, and drying area and, in some cases, serves as an extended kitchen or additional storage space.

Amenities for the residents in high-rise flats are limited, and are usually inadequate for the large number of families staying in the area. The emphasis of these schemes was to construct as many dwellings as possible to maximize density. Provision of amenities would take up land and deprive the scheme of more dwellings (Jagatheesan 1979). Provision for car parks and motorcycle parks is usually insufficient. Although there are children's play areas, playgrounds were omitted. There is also no provision for schools and kindergartens or facilities to accommodate hawkers in properly demarcated areas, although hawkers are inevitably attracted to these concentrations of population (Jagatheesan 1979).

Dissatisfaction with the physical environment and social problems does arise from living in high-rise, high-density flats. Studies conducted on these schemes have indicated that the residents usually complain about the noise, lifts, and limited flat size (Leong 1979). The low-income household is generally large — around six to seven persons — so the one- or two-bedroom unit is rather crowded. Often, the living room has to be converted into a sleeping area at night. In areas where the water pressure is low, the occupants of high-rise flats complain of inadequate water supply. Housewives find the kitchen and the bathroom extremely small to carry out their domestic jobs. In many Malaysian homes, the kitchen is used as a dining area so a larger kitchen is commonly favoured among the residents.

A study carried out in the Rifle Range Flats revealed that flat living does not necessarily promote intra-ethnic interaction (Abraham 1979). In fact, the residents prefer another ethnic group as a neighbour to maintain privacy and to avoid social control exercised over them by their own community members.

There are also indications that the residents prefer to stay on lower floors. Many indicated that they would rather remain where they are or stay at a lower level instead of on an upper storey. They express concern over vandalism, gangsterism, the lack of playgrounds, the general condition of the environment, and the effects upon their children (Omar 1977).

The government realized that high-rise, high-density living is not particularly popular with the low-income population. However, it has not abandoned this approach especially in the urban areas that are more congested and where the need to provide housing to the low-income population is especially urgent.

Medium-Rise, Medium-Density, Low-Cost Housing

Medium-rise, medium-density, low-cost housing is commonly located in and around the urban areas, but often about 4 to 5 miles (6.4 – 8.1 km)

from the town centres. Often known as walk-up flats because they are between four to six storeys high, the gross density is between 30 to 50 units per acre.

Some were designed by the Housing Trust, others by the local government and state development corporations such as that of Selangor and more recently by the National Housing Department of the Ministry of Housing.

As in the high-rise, high-density schemes, most of the occupants earn less than a monthly household income of M$300 (US$136). The majority of the residents are hawkers, unskilled and semi-skilled workers, and civil servants in the lowest skill categories. The flats in medium-rise, medium-density development are usually rented out at average rental rates between M$36 (US$16.4) and 55 (US$25)/month. The types of walk-up flats commonly seen in Malaysia are illustrated in Figure 1.

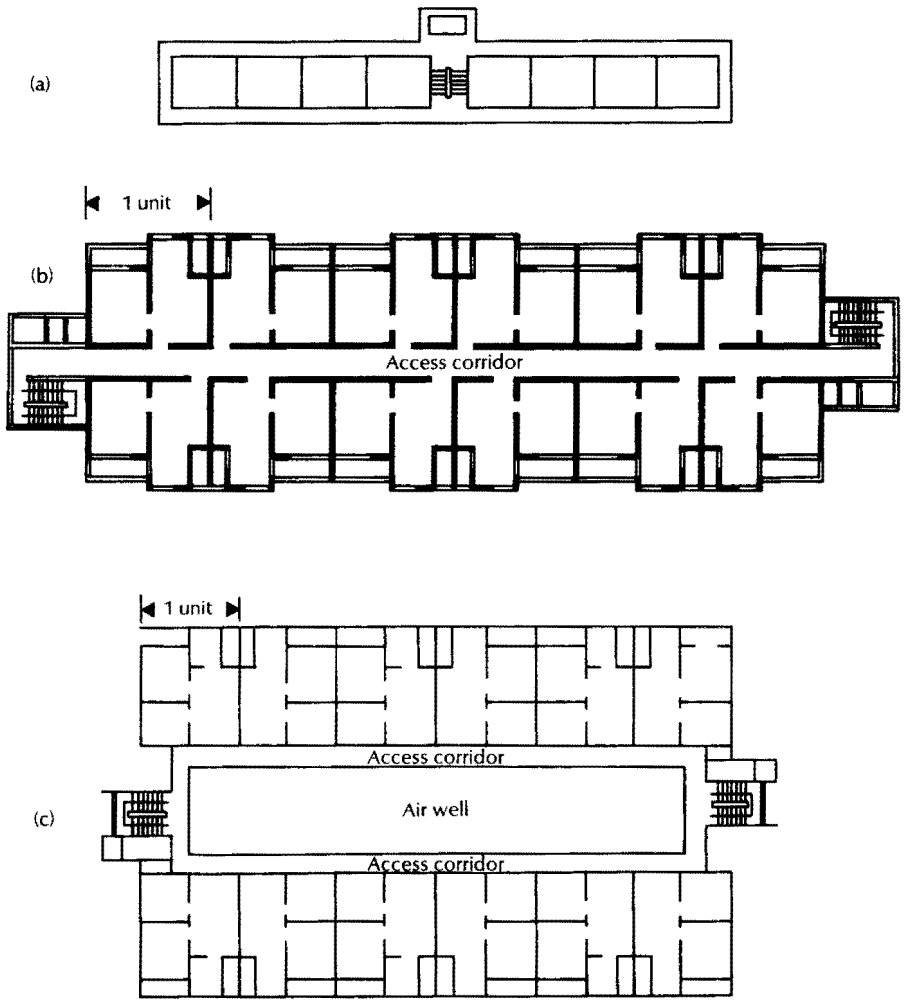

Fig. 1. Types of typical walk-up flats: (a) Type 1 — external corridor; (b) Type 2 — internal corridor access; and (c) Type 3 — central air-well corridor access.

Some of the blocks are designed with shops occupying the ground floor whereas others are completely occupied by flats.

In the case of Type 1, ventilation is excellent but, for security reasons, tenants are reluctant to open the windows facing the common corridor. In Type 2, if the closed corridor is short of natural ventilation, lighting will not be adversely affected. In the case of Type 3, because the building is not too high, the central air well does not block light and ventilation and the design is quite acceptable. Privacy in Type 3 is better than Type 1 but there is more privacy in Type 2. There is an average of 12 to 15 units per floor. The dimensions of a unit are similar to those of a high-rise flat.

There are two types of units available — the one- and two-bedroom units. The average size of a one-bedroom flat is 360 feet^2 (110 m^2) and that of a two-bedroom unit is approximately 500 feet^2 (152.5 m^2). In some areas, the kitchen and bathroom are located in the front of the unit and this is not culturally acceptable to most Malaysians who prefer these two areas to be located at the back away from the eyes of passers-by and visitors. Disposal of garbage is through refuse chutes designed to keep the environment clean, but, due to misuse, rubbish is often littered around the opening of the chutes.

Studies undertaken on medium-rise, medium-density schemes indicate that the residents are generally quite satisfied with the environment in which they live (Sharf 1979). Although there were complaints about the noise level, uncleanliness due to inconsistencies in rubbish collection, vandalism and gangsterism, and inadequate playgrounds, many of the residents find the place more acceptable than high-rise, high-density flats.

Low-Rise, Medium-Density, Low-Cost Housing

Consisting of double-storey terrace units modified from ordinary terrace housing, the gross density of most of the existing schemes is within the range of 20 – 50 dwelling units per acre. Only the cluster-link housing scheme at Jalan Cheras, Kuala Lumpur, has a gross density of 55.7 units per acre. Cluster-link terrace housing is a recent innovative approach to low-cost housing. Bearing in mind that Malaysians do not favour high-rise flats but tolerate medium-rise housing, the cluster-link housing was devised as a compromise between what would be acceptable and affordable to most Malaysians.

In terms of house design, the cluster-link terrace houses comprise four units of terrace houses clustered together and joined by a common 8-foot (2.4 m) breezeway. Each unit opens into the breezeway and faces each other directly. Each plot measures 14 by 39 feet (4.3 by 11.9 m) and is considerably smaller than the normal terrace house, which has a plot size of 22 by 75 feet (6.7 by 22.9 m). Total floor area is 500 feet^2 (152.5 m^2) for each cluster house. There are two bedrooms on the first floor and on the ground floor are the kitchen, the bathroom, and the lounge-cum-dining room. On the first floor, the staircase opens directly into one bedroom that has no door or partitioning. The cost of construction (excluding land) was about M$5600 (US$2545)/unit in 1977.

Another scheme using the same design was implemented in Setapak Jaya, Kuala Lumpur. Its layout is different from that of the Cheras scheme, allowing for more open spaces and achieving a lower density of 39.9 units

per acre. The cost of construction of one unit is not known but its selling price was M$12 600 (US$5727)/unit in 1979.

Another version of a cluster unit is quadrant housing. Designed on the same principle as cluster housing, the four units are grouped together, and separated by a shared air well. The houses do not open into a breezeway nor do they face each other. The selling price of a unit was around M$16 000 (US$7273) in 1979. An example of this type of housing is found in the new town of Bayan Baru, Penang.

Another type of low-rise, medium-density, low-cost housing is the double-storey reduced frontage terrace house. Instead of the ordinary frontage of 20 to 22 feet (6.1 to 6.7 m), a change in the bylaws and planning standard allows for the frontage to measure from 12 to 16 feet (3.7 to 4.9 m). At the Ex-Maha site, Old Klang Road in Kuala Lumpur, the Selangor State Department Corporation has built double-storey compact houses with 12-foot (3.7 m) frontages. The density at the site is about 30 units per acre, with each lot measuring 12 by 40 feet (3.7 by 12.2 m) and the total floor area of one unit being 552 feet^2 (168.4 m^2). There are two bedrooms on the ground floor. The cost of construction per unit was M$7000 (US$3182) in 1976.

Low-cost schemes developed by private developers employ a larger frontage — between 14 and 16 feet (4.3 and 4.9 m). A scheme at the new town of Seri Petaling outside Kuala Lumpur has 1114 units, each with a 14-foot (4.3 m) frontage and built-up area of 672 feet^2 (204.9 m^2)/unit. Each unit is sold at slightly under M$20 000 (US$9091), which is the government maximum selling price for low-cost housing. Other schemes with a similar approach are Seri Gombak in Selangor and Ipoh Garden in Ipoh, Perak.

The average gross density of the low-rise, medium-density, low-cost housing schemes ranges from 18 to 22 units per acre. The lot size of a unit is usually 14 by 55 feet (4.3 by 16.8 m) or 14 by 54 feet (4.3 by 16.5 m). They are designed for families with a household income of around M$500 – 600 (US$227 – 273)/month.

Although the density in the low-rise schemes is relatively high and is comparable to the medium-rise housing schemes, studies have indicated that the residents are more satisfied with staying in the former (Chong 1978). The residents are satisfied with the general housing environment, i.e., with the location of footpaths and open spaces, noise level, and the availability of amenities and facilities. Residents have also indicated that, compared to high-rise and medium-rise structures, low-rise housing provides greater safety for their children and the problems of lifts and staircases are eliminated. Noise does not constitute a major problem and some degree of privacy is possible. Conditions for initiation of friendship and interaction are more favourable than in the high-rise schemes. However, as in all low-cost schemes, the residents find the use of space within their units inadequate and prefer larger kitchens and bathrooms.

Evaluation of the Three Approaches

Because of resource constraints, 10 case studies have been selected. The method of evaluation is qualitative as the study is emphatically exploratory. The authors hoped that the findings would indicate relationships that

could be tested, using large samples and quantitative tools, in later studies.

The various urban low-cost housing approaches are evaluated in terms of their physical environment, which is reflected in the house or building design, external circulation surrounding the house, provision of community facilities and open spaces, and the physical orientation of the building.

In evaluating the components of the physical environment, considerations are given to safety and protection against accidents and hazards, such as fire or children falling from higher storeys; to protection against atmospheric pollution resulting from vehicular movements and domestic activities such as cooking; to protection against excessive noise; to provisions for maintenance of the environment, cleanliness of the dwelling, thermal comfort, and ventilation; to minimizing fatigue from climbing stairs and long distances to community facilities and shops; to provision for privacy and opportunities for social interaction and community participation; and to provision of aesthetic satisfaction and opportunities to expand the physical space of each unit to accommodate changing needs.

Building Design

In evaluating the three approaches studied, the high-rise, high-density approach scores the highest negative values for building design (Table 5). The other approach with negative values is the medium-rise, medium-density, low-cost housing, but these scores are relatively lower than the high-rise, high-density approach. In the low-rise, medium-density approach, the building design is found to be acceptable, with the compact terrace housing having high positive scores of (+)61 and (+)40 against the cluster-link housing with scores of (+)18 and (+)21.

A closer examination of the scores of each housing approach reveals that in the high-rise, high-density, low-cost housing, the building design does not provide adequate facilities for escape during an outbreak of fire. The residents have to depend on the two or three lifts in their block or on the staircases during a fire, which means that there would be about 1000 people rushing to use these facilities simultaneously. The medium-rise, medium-density housing faces the same, though not such great, difficulties with safety and protection against such hazards. If the staircases are centrally located and there are a sufficient number of them spanning a block, escape during a fire would not pose much difficulty. Nevertheless, medium-rise flats are potentially hazardous because children play along the corridors and the danger exists of them falling over the edges of the balconies.

The size of a dwelling unit in both the high-rise, high-density or medium-rise, medium-density schemes is often less than 600 feet^2 (183 m^2). The flat is either a two- or three-room unit, with the kitchen and the bathroom located next to the hall and bedroom. Privacy is limited because of expansion of space to accommodate a larger household.

In the high-rise, high-density and medium-rise, medium-density housing, the provision of refuse chutes helps in the maintenance of cleanliness within the block and the individual dwelling units. However, the refuse chutes are often not centrally located and the attitude of the residents on

Table 5. Evaluation of the environmental quality provided by the building design of low-cost housing.

	High-rise, high-density			Medium-rise, medium-density			Low-rise, medium-density			
Factors evaluated	Rifle Range	Kampung Melayu	Noordin Street Ghaut	Jalan Cheras	Bukit Bangsar	Datuk Keramat	Cluster-link Cheras	Cluster-link Setapak Jaya	Compact house Ex-Maha	Compact house Seri Petaling
Safety and protection against accident hazards	−18	−9	−18	−9	0	−9	+9	+9	+18	+18
Protection against atmospheric pollution	−2	−2	0	−2	0	−2	0	0	+2	+2
Protection against excessive noise	−12	−12	−12	−6	−6	−6	−6	−6	0	+6
Provision for maintenance and cleanliness	−8	−8	−8	−4	0	−4	+4	+4	+4	+4
Provision of thermal comfort and ventilation	0	−5	−5	0	+5	0	+5	+5	+5	+10
Minimizing fatigue	−3	−3	−3	−3	−3	−3	+6	+6	+6	+6
Provision of adequate privacy	−10	−10	−10	−10	−10	−10	−5	−5	0	+10
Opportunities for social interaction and community participation	+3	+3	+3	+3	+3	+3	+3	+6	0	0
Provision of aesthetic satisfaction	−1	−1	−1	0	−1	0	+1	+1	+1	+1
Provision of opportunities to expand physical space to meet changing needs	−8	−8	−8	−8	−8	−8	+1	+1	+4	+4
Total scores	−59	−55	−62	−39	−20	−39	+18	+21	+40	+61

their use as communal facilities results in the scattering of rubbish and garbage around the vicinity of the refuse chutes in these low-cost schemes.

In the high-rise, high-density schemes, the building design does not favour thermal comfort and good ventilation. However, this observation is not true for the other types of low-cost housing approach. The medium-rise, medium-density and all the house types representing the low-rise, medium-density approach register either positive scores or are neutral in this aspect.

In comparison with high-rise, high-density and medium-rise, medium-density low-cost housing, the design of the low-cost, medium-density housing is of a much better quality. It scores positively in terms of safety and accident factors, minimizing fatigue, maintenance and cleanliness of the environment, and opportunities of expanding the physical space of the unit, as opposed to the negative scores of the high-rise and medium-rise housing. With respect to the factor on noise protection and provision of privacy, this would depend on the design of the low-rise housing. The cluster-type of housing, in which four units are grouped together, does not provide adequate protection against noise and privacy compared to compact houses where each house has its own lot and the lots are arranged in rows.

Thus, with respect to house design, the low-rise, medium-density approach appears superior to the high-rise, high-density and medium-rise, medium-density approaches to low-cost housing.

External Circulation System

The external circulation system in the high-rise, high-density and medium-rise, medium-density housing schemes scores high positive values of (+)44 and (+)32 (Table 6). This is attributed largely to the absence of through-traffic in the schemes. Roads leading from the major roads outside the scheme into the residential areas are minimal and parking facilities for cars are usually provided along the roads in the car parks located nearby so that there is a distinct separation between vehicular movement in the areas and pedestrian movement around the blocks of buildings. As a result of minimal through-traffic, there is adequate protection against noise and atmospheric pollution in the high-rise and medium-rise low-cost housing schemes.

In the case of low-rise, medium-density housing, the cluster-link housing schemes at Jalan Cheras and Setapak Jaya, Kuala Lumpur, have a distinct demarcation between pedestrian and vehicular movements and are, therefore, safer as compared to the compact housing schemes in which the grid system of roads prevails. Protection against noise and atmospheric pollution emitted by motor vehicles is poor in the low-rise, medium-density housing areas as compared to their high-rise and medium-rise counterparts. This is especially significant in the case of the compact houses. The factor of minimizing fatigue is not important in almost all the approaches studied except for the low-rise, medium-density housing scheme at Setapak Jaya where more pedestrian movements are required between houses and the car park and other community facilities provided within the scheme.

Opportunities for social interactions are influenced by the siting of

Table 6. Evaluation of the environmental quality provided by external circulation in low-cost housing.

	High-rise, high-density			Medium-rise, medium-density			Low-rise, medium-density			
Factors evaluated	Rifle Range	Kampung Melayu	Noordin Street Ghaut	Jalan Cheras	Bukit Bangsar	Datuk Keramat	Cluster-link Cheras	Cluster-link Setapak Jaya	Compact house Ex-Maha	Compact house Seri Petaling
Safety and protection against accident hazards	+10	+10	+10	+10	+10	+10	+10	+10	−10	−10
Protection against atmospheric pollution	+6	+6	+6	+6	+6	+6	−6	−6	−12	−12
Protection against excessive noise	+7	+7	+7	+7	+7	+7	−7	−7	−7	−7
Provision for maintenance and cleanliness	+2	+2	+2	+2	+2	+2	+2	−2	+4	+4
Provision of thermal comfort and ventilation	—	—	—	—	—	—	—	—	—	—
Minimizing fatigue	+10	+10	+10	0	0	0	+5	−5	+5	+5
Provision of adequate privacy	+2	+2	+2	0	0	0	−2	−2	0	+4
Opportunities for social interaction and community participation	+5	+5	+5	+5	+5	+5	+5	+10	−5	−5
Provision of aesthetic satisfaction	0	+2	0	0	+2	+2	+2	+2	0	+4
Provision of opportunities to expand physical space to meet changing needs	—	—	—	—	—	—	—	—	—	—
Total scores	+42	+44	+42	+30	+32	+32	+9	0	−25	−17

community facilities, and open spaces, and pedestrian walkways linking these facilities to the dwelling units. In the high-rise, high-density and medium-rise, medium-density housing approaches, the facilities are often located nearby or within the vicinity of the flats and can be reached easily by walking. In low-rise, medium-density housing, the opportunities for social interaction are found in the house types that emphasize pedestrian walkways, of which cluster-link housing is an example.

Because the buildings are grouped together in high-rise and medium-rise housing, external circulation is minimal and clear separations between pedestrian walkways and roads are possible. This explains why the two approaches have positive values. For compact housing, the scores are negative, indicating that external circulation in such schemes is unsatisfactory.

Provision of Community Facilities and Open Spaces

The medium-rise, medium-density approach and the cluster-link housing of the low-rise, medium-density approach have the highest positive scores for provision of community facilities (Table 7).

In the case of high-rise, high-density housing, the negative scores of (−)42, (−)10, and (−)14 are mainly due to the lack of both privacy and opportunities for social interaction measures, and safety and protection against accidents and noise. The schemes studied have neither playgrounds nor major community facilities located within their immediate neighbourhood for the residents' use. Where such facilities do exist, they are hardly adequate for the large population staying in the area. The area between the blocks is expected to be used as a play area for children but because of competing use by hawkers and motorcycle- and bicycle-users, these places are often not safe for children to play in.

The compact houses under the low-rise, medium-density approach share similar problems. The layout in such schemes necessitates the groupings of community facilities and open spaces to maximize land use, which means that accessibility to the common areas involves crossing major roads. The medium-rise, medium-density housing and the cluster-link housing of the low-rise, medium-density approach have positive scores of (+)9 and (+)21 respectively. In the cluster-link housing, the system of pedestrian walkways linking the dwelling units to the playgrounds and other facilities helps to reduce possibilities of road accidents in the area. Because a small number of dwelling units are grouped around an open space, it reduces the number of residents using each open space within the scheme and encourages greater social interaction among the smaller groups. The same observation holds for the medium-rise, medium-density flats.

Comparing the three approaches, the high-rise, high-density low-cost housing approach ranks lowest with respect to the provision of community facilities and open spaces. The low-rise, medium-density approach appears better than the high-rise approach but, then, it depends on the type of housing in question. If it is row housing, provision of these facilities is not much better than those in the high-rise, high-density flats. The medium-rise, medium-density and the cluster type of housing under the low-rise, medium-density approach are comparable except for the case of

Table 7. Evaluation of the environmental quality provided by community facilities and open spaces in low-cost housing.

	High-rise, high density			Medium-rise, medium-density			Low-rise, medium-density			
Factors evaluated	Rifle Range	Kampung Melayu	Noordin Street Ghaut	Jalan Cheras	Bukit Bangsar	Datuk Keramat	Cluster-link Cheras	Cluster-link Setapak Jaya	Compact house Ex-Maha	Compact house Seri Petaling
Safety and protection against accident hazards	−18	0	−9	0	0	0	+9	+18	−18	−18
Protection against atmospheric pollution	—	—	—	—	—	—	—	—	—	—
Protection against excessive noise	−6	−3	−3	−3	0	0	−3	−3	0	0
Provision for maintenance and cleanliness	−4	−2	−2	−2	0	−2	0	−3	+4	0
Provision of thermal comfort and ventilation	+1	+1	+1	+1	0	0	0	0	0	0
Minimizing fatigue	+2	+2	+2	+2	0	0	−2	0	0	0
Provision of adequate privacy	−4	−2	−2	−2	−2	−2	−2	−4	+2	+2
Opportunities for social interaction and community participation	−12	−6	0	+12	+6	+6	+6	+12	+6	−6
Provision of aesthetic satisfaction	−1	0	−1	0	0	0	+1	+1	+1	0
Provision of opportunities to expand physical space to meet changing needs	—	—	—	—	—	—	—	—	—	—
Total scores	−42	−10	−14	+8	+4	+2	+9	+21	−5	−22

Setapak Jaya where the layout provides for greater protection against road accidents and greater opportunities for social interaction.

Physical Orientation

The high-rise, high-density approach emphasizes the physical orientation of bulidings. Of the three schemes studied, two have shown good orientation with the exception of the Rifle Range Flats where the large number of blocks located near one another provides no protection against noise and privacy. The other cases examined showed overall total positive scores of (+)8 and (+)6 (Table 8). The medium-rise, medium-density approach also has good physical orientation, except for the Bukit Bangsar scheme. The blocks are not too numerous and are not located too near to each other or to major roads. Thus, the question of atmospheric pollution is not a problem. Provision for thermal comfort and ventilation is the major factor contributing to the positive scores on the physical orientation of the high-rise, high-density and medium-rise, medium-density approaches.

Under the low-rise, medium-density housing approach, the cluster-link housing design shows a poorer orientation of buildings as compared to the compact houses where the orientation of buildings minimizes noise and provides adequate privacy from neighbours. Although the physical orientation of the houses in each cluster encourages social interaction, it does not favour privacy or reduce noise, unlike the compact houses where these two factors are strongly favoured.

Quality of the Physical Environment

By "quality of the physical environment" we mean the conditions of the physical environment and its effect on the various aspects of living including social and cultural conditions. The quality of the physical environment of the high-rise, high-density approach is poor mainly because of poor building design and insufficient provision of community facilities and open spaces. Although this approach economizes on scarce urban land and is able to house a large low-income population, in the Malaysian context it may not be the best strategy for housing the poor.

The quality of the physical environment under the medium-rise, medium-density approach is relatively better than that under the high-rise approach. Although the house design is not significantly better, its higher quality index is attributed to a lower density that allows greater accessibility to community facilities and open spaces.

The low-rise, medium-density approach is characterized by two different house designs each of which affects the quality of the environment. In the case of the cluster-link house, the house design and provision of community facilities and open spaces are the major factors that bring about a better quality of physical environment (Table 9). In the compact housing schemes, through-traffic has an adverse effect on external circulation. The house design and layout hamper opportunities for greater social interaction and community participation but on the whole they do contribute to a better quality of environment (see Table 9).

On the basis of the quality indices for the physical environment, the

Table 8. Evaluation of the environmental quality provided by the physical orientation of low-cost housing.

	High-rise, high-density			Medium-rise, medium-density			Low-rise, medium-density			
Factors evaluated	Rifle Range	Kampung Melayu	Noordin Street Ghaut	Jalan Cheras	Bukit Bangsar	Datuk Keramat	Cluster-link Cheras	Cluster-link Setapak Jaya	Compact house Ex-Maha	Compact house Seri Petaling
Safety and protection against accident hazards	—	—	—	—	—	—	—	—	—	—
Protection against atmospheric pollution	0	0	0	+2	+2	+2	0	0	0	0
Protection against excessive noise	−4	0	−2	−2	0	−2	−2	−4	+2	+2
Provision for maintenance and cleanliness	—	—	—	—	—	—	—	—	—	—
Provision of thermal comfort and ventilation	+8	+8	+8	+16	−8	+8	0	0	0	+8
Minimizing fatigue	0	0	0	+1	0	0	0	+1	0	0
Provision of adequate privacy	−4	0	0	−4	−4	0	−4	−8	+4	+4
Opportunities for social interaction and community participation	0	0	0	+3	0	+3	+3	+6	−3	−3
Provision of aesthetic satisfaction	−4	0	0	−1	0	+1	+1	+2	0	0
Provision of opportunities to expand physical space to meet changing needs	—	—	—	—	—	—	—	—	—	—
Total scores	−4	+8	+6	+15	−10	+12	−2	−3	+3	+11

Table 9. Evaluation of the quality of the physical environment.

Components of the physical environment	High-rise, high-density			Medium-rise, medium-density			Low-rise, medium-density			
							Cluster housing		Compact housing	
	Rifle Range	Kampung Melayu	Noordin Street Ghaut	Jalan Cheras	Bukit Bungsar	Datuk Keramat	Cheras	Setapak Jaya	Ex-Maha	Seri Petaling
House design	−59	−55	−62	−39	−20	−39	+18	+21	+40	+61
External circulation	+42	+44	+42	+30	+32	+32	+9	+2	−25	−17
Provision of community facilities and open spaces	−42	−10	−14	+8	+4	+2	+9	+21	−5	−22
Physical orientation	−4	+8	+6	+15	−10	+12	−2	−3	+3	+11
Index of quality (total scores)	−63	−13	−28	+14	+6	+7	+34	+41	+13	+33
Gross density	204.0	100.0	192.0	37.0	53.0	50.0	55.7	39.9	34.6	28.0

authors conclude that among the three approaches used in Malaysia, the medium-rise, medium-density and the low-rise, medium-density are the more appropriate forms of housing for low-income populations in urban areas. The trade-off between density and environmental quality indicates that a higher density leads to a deterioration in the physical environment. Of the two selected approaches, there is a significant difference between the quality of the environment. The low-rise, medium-density has significantly higher scores on the quality of the environment and appears to be a better choice over the medium-rise, medium-density approach (see Table 9).

Cost per Unit and Quality of the Environment

Cost per unit refers to all costs including construction (building, infrastructure, and land development works) and land costs. In this paper, the land cost is calculated on a hypothetical basis, based on the assumptions that the land area of each scheme is 50 000 acres and the cost is M$50 000 (US$22 727)/acre (Tables 10 and 11).

In terms of cost per unit, the high-rise, high-density approach is relatively cheap. A standard two-room unit costs less than that of a standard two-room unit in medium-rise, medium-density housing but varies depending on the method of construction. For example, for the Rifle Range Flats an industrialized prefabricated technique of construction was used so that construction cost per unit was higher than that of Kampung Melayu and Noordin Street Ghaut Flats for which a conventional reinforced concrete method was used. Comparing the latter two schemes, as the cost per unit rises, the quality of the environment tends to improve.

Compared with the other approaches, the cost per unit of a medium-rise, medium-density dwelling unit is the highest, due partly to a lower density and to the provision of more community facilities and open spaces. A direct relationship between cost per unit and the quality of the environment is not too apparent in the case of the medium-rise, medium-density housing. The exceptional case is the Bukit Bangsar Flats where poorer house design and physical orientation of buildings affects adversely the quality of the environment. Also, the cost of construction in this case was relatively high because the flats are situated on higher ground compared with the other two schemes in the same category.

The same relationship is also not so clearly discernible under the low-rise, medium-density approach because the variations in house designs affect the cost. The compact houses are more expensive to build than the cluster-link houses. The grouping of four dwelling units into a cluster saves on construction cost per unit. Also, construction cost is lower in the cluster-link housing schemes because of savings in road construction. The direct relationship between cost per unit and the quality of the environment can be observed within each housing type under the same approach. The cluster-link scheme in Jalan Cheras has a lower index of environmental quality than the scheme in Setapak Jaya but the cost of the latter is higher. Similarly, the cost of a compact house in the Ex-Maha site scheme is lower than that in the new town of Seri Petaling but, then, its index of environmental quality is also lower.

Table 10. Cost of construction (building, infrastructure, and land development) and land cost.

Housing approaches	Housing types	Unit size (feet^2)	Construction cost/feet^2 (M$)	Construction cost/unit (M$)	Construction cost/unit (adjusted to 1980 prices) (M$)	Land cost[f] (M$)	Total cost/unit (M$)
High-rise, high-density	Rifle Range	454	10.85[a]	4925	10 214	245	10 459
	Kg. Melayu	393	8.01[a]	3148	6651	500	7151
	Noordin St. Ghaut	393	8.28[a]	3254	6749	246	6995
Medium-rise, medium-density	Cheras	399	27.57	11 000[c]	16 772	1351	18 123
	Bukit Bangsar	391	27.57[b]	10 780	16 437	943	17 380
	Kg. Datuk Keramat	532	19.36	10 300[c]	15 029	1000	16 029
Low-rise, medium-density	Cheras cluster	543	10.31	5600[d]	7428	898	8326
	Setapak Jaya cluster	671	—	—	11 592[e]	1253	12 845
	Ex-Maha compact	564	14.68	8277[d]	12 077	1445	13 522
	Seri Petaling compact	672	—	—	19 872[e]	1786	21 658

[a]Leong (1979).
[b]Assumed to be the same as cost/foot^2 in the Cheras scheme.
[c]Khuzaimah (1978).
[d]Federal Department of Town and Country Planning, undated.
[e]Estimated from selling price with an allowance for 20% profit.
[f]Assumed a hypothetical area of 50 000 acres for each of the schemes. Cost of land in 1980 is assumed to be 50 000/acre. Calculated on the basis of given density of each scheme.

Table 11. Comparison between density, cost, and quality of the physical environment.

Approach	Low-cost housing schemes	Gross density	Total cost/unit (M$)	Index of quality
High-rise, high-density	Rifle Range	204.0	10 460	−63
	Kampung Melayu	100.0	7150	−13
	Noordin Street Ghaut	192.0	7000	−28
Medium-rise, medium-density	Cheras	37.0	18 120	+14
	Bukit Bangsar	53.0	17 380	+6
	Datuk Keramat	50.0	16 030	+7
Low-rise, medium-density	Cheras cluster	55.7	8330	+34
	Setapak Jaya cluster	39.9	12 850	+41
	Ex-Maha compact	34.6	13 520	+13
	Seri Petaling compact	28.0	21 660	+33

Conclusions and Implications

As the cost per unit of all the low-cost housing falls within the "affordability" of the low-income groups (see Table 2), the question of affordability is not discussed here. Instead, cost is discussed in relation to the quality of the environment, which should be the overriding concern of low-cost housing programs.

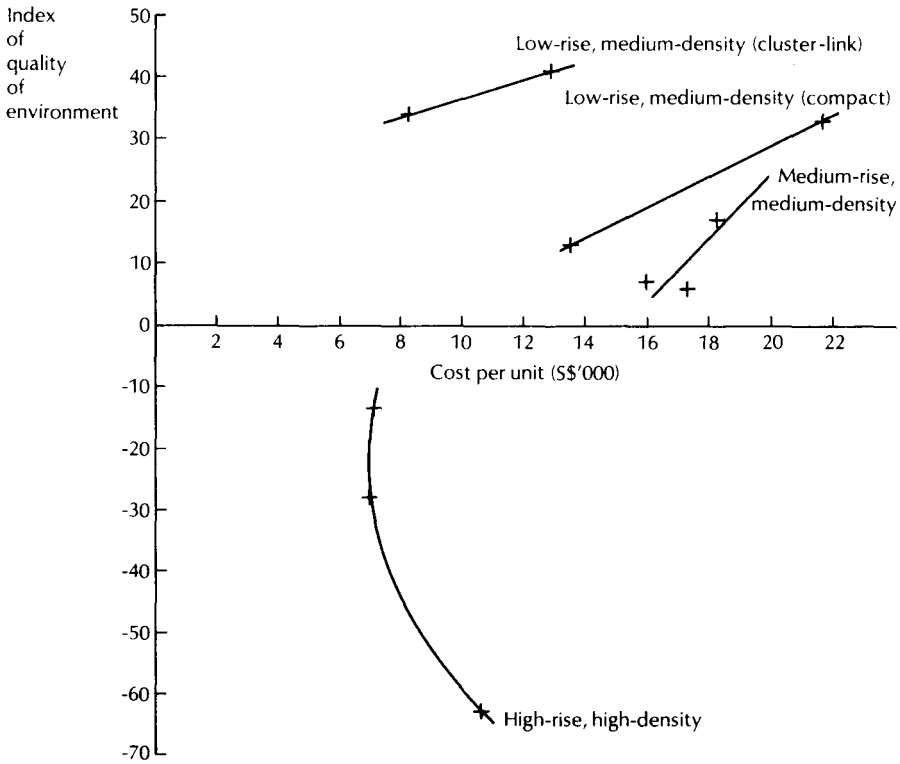

Fig. 2. Quality of the physical environment and cost per unit.

Although the cases studied are not sufficient to confirm a definite direct relationship between cost of development and the quality of the environment, they do indicate that by spending more on a low-cost housing scheme, it is possible to improve the quality of the environment. As cost per unit increases, the quality of the environment also improves (Figure 2). This relationship is quite apparent in the low-rise, medium-density and medium-rise, medium-density approaches. The relationship appears more marked for the medium-rise, medium-density and compact housing in which a proportionate increase in cost can bring about a proportionate improvement in quality. In the case of the high-rise, high-density approach, the relationship between the quality of the environment and cost per unit is not clearly brought out because of the Rifle Range Flats.

An inverse relationship exists between the density and quality of the environment in all low-cost housing schemes (Figure 3). In the case of high-rise, high-density housing, it can be seen that when density is increased, the quality of the environment declines at a rate that is proportionately more than the increase in density. The same observation is obtained for the compact housing under the low-rise, medium-density approach. However, in the case of cluster-link housing, an increase in density appears to bring about a proportionate decline in the quality of the environment.

The absence of a marked direct relationship between cost and the quality of the environment in the high-rise, high-density housing suggests

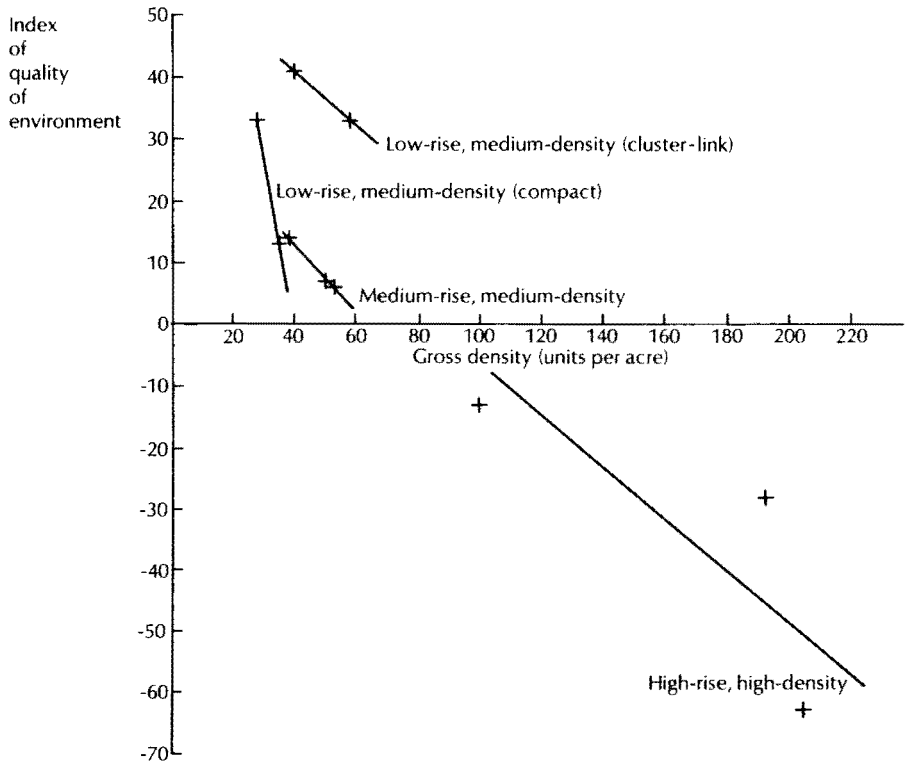

Fig. 3. Quality of the physical environment and gross density.

that it may not be possible to improve the environment by spending more on high-rise flats. However, in medium- and low-rise housing, it is possible to improve the quality of the environment by spending more although the increase in cost is constrained by what the low-income population can afford to spend on housing.

In the medium-rise and compact housing, cost constraints are important because they are already within the upper limits of the affordability of the low-income groups and it may not be possible to increase costs further to achieve a better quality environment. In cluster-link housing, increasing cost would bring about a less than proportionate improvement in environmental quality but there are opportunities to improve the quality further because the cost of development is relatively low.

The inverse relationship between density and quality of environment in the case of cluster-link housing suggests that any major increase in density is unlikely to have an extremely adverse effect on the quality of the environment as compared to compact and medium-rise housing where an increase in density would bring about a more than proportionate decline in environmental quality.

Although the cost per unit under the high-rise, high-density approach is relatively lower compared to the other alternatives, its use must be considered vis-à-vis the quality of the environment. The poor environmental quality found in the existing high-rise schemes suggests that the approach be replaced by other better alternatives, i.e., either the medium- or low-rise housing.

Both the medium- and low-rise housing have positive indices on the quality of the environment but the cost per unit is lower for the latter, except for the compact house in Sri Petaling. The cost of one unit of cluster-link is comparatively low. Combining the indices on environmental quality, density, and cost per unit, the low-rise, medium-density approach offers the low-income population access to low-cost housing that is within their means and that is culturally and socially compatible with their way of life.

Between the two types of low-rise, medium-density housing, the cluster-link housing appears to combine effectively cost, density, and quality of the physical environment. It permits higher density, thus lowering cost and, at the same time, it provides a high quality environment for its residents.

From these findings, three recommendations are offered. Firstly, the application of high-rise, high-density low-cost housing for the family-oriented low-income population in the urban areas should be carefully reconsidered. Secondly, public and private builders should opt for greater use of low- and medium-rise housing in the urban areas, especially that of low-rise, medium-density. Thirdly, a special effort should be made to develop low-cost housing schemes using the cluster-link design or variations of its design.

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Recent Trends in Low-Income Housing Development in Thailand

Sidhijai Tanphiphat

Since 1975, when a comprehensive study sponsored by IDRC (Nathalang 1978) to analyze the various aspects of housing in Thailand was completed, much progress has been made in coming to grips with the reality of the housing situation of the low-income population. Firstly, with the housing problems of the low-income population being better understood, the public sector has made major efforts to intervene in the marketplace by constructing much low-income housing. In the process it has yielded useful feedback and experiences that have resulted in many novel policies and programs being adopted.

This paper outlines the population growth and distribution, urbanization, and economic contexts within which the characteristics of the country's housing demand are determined and the housing delivery or supply systems operate. Particular attention is given to the critical area of housing delivery for the low-income urban population and the policies, programs, and significant innovations that have been initiated.

Housing Demand and Supply Pattern

Thailand's population growth rate peaked during the early 1970s reaching a high of nearly 3%/year between 1965 and 1975.[1] In 1975, the total population reached 42 million, of which about 6 million or 14% lived in urban areas (NSO 1976). By 1980, the overall growth rate had declined to about 2.4%, with a total population of about 47 million whereas the urban population growth rate had also declined to about 4%. Urban population distribution remained, however, uneven; for example, Bangkok's share of the total urban population of 45% in 1947 had increased to 62% in 1976, and 70% by 1980.

Although the latest statistics for the Bangkok Metropolitan Area (BMA) suggest that the growth rate of Bangkok had declined to about 3% in 1980, against a peak of 5.3% in 1975, its population of 5.2 million was still over 40 times larger than the next largest urban centre. The growth rates of other urban centres varied but have been substantial. By 1976, three-quarters of all urban centres had populations between 10 000 and 50 000 whereas in 1947 three-quarters had less than 10 000.

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[1]Population Registration Bureau, Department of Local Administration, Ministry of Interior.

Against these population trends, the supply of new housing was at least in keeping with the demands in both urban and rural areas in the period 1970 to 1976 (Table 1). However, the situation is not uniform in all areas of the country, and indications of overcrowding, as depicted by the index of more than one household to a dwelling, appeared in such cities as Songkla, Had-Yai, Chiengmai, Korat, and Bangkok.

The absence of numerical deficits that could be substantiated through observation anywhere in Thailand, does not necessarily mean, however, that all is well with the housing sector.

Income is a major determinant of effective demand and, hence, the standard of housing attainment, in any given economy. In Thailand, income distribution is not uniform between those living in urban and rural areas, between different regions of the country, and even between urban areas. Whereas rural household incomes are lower than urban incomes, the acquisition of rural shelter may be realized mainly through the easily available production factors such as land and building materials. Thus, discrepancies in income levels between the urban and rural areas do not simply imply a gulf of difference in their housing standards. On the contrary, rural housing has better environmental standards compared to urban low-income housing.

Bangkok is an example of income disparity. Whereas Bangkokians, on average, earned 2.5 times more than the national average (Table 2), the lowest 40% of all households earns only 24% of the total income of Bangkok whereas the top quintile earns 36% (Table 3). This income disparity is similar in all other regions. The disparity between Bangkok and other urban areas over time is portrayed in Figure 1. It is to be expected, then,

Table 1. Growth of housing stock relative to population by regions.

Area	Central[a]	Northeast[b]	North[c]	South[d]	Whole kingdom
1960–1970					
Whole kingdom	0.99	0.98	0.97	0.96	0.98
1960–1976					
Whole kingdom	1.05	1.00	1.05	0.97	1.02
1970–1976					
Urban	1.11	1.06	1.10	1.08	1.10
Rural	1.03	1.01	1.08	0.99	1.03

[a]Includes Bangkok, Chonburi.
[b]Includes Khon Kaen, Korat, Ubon, Udon.
[c]Includes Nakorn Sawan, Pisanulok, Chiengmai.
[d]Includes Songkla, Had-Yai, Phuket, Nakorn Sri Thammarat.
Sources: NSO (1960, 1970, 1976).

Table 2. Household total income as a percentage of the national average.

	Regional (%)		Urban (%)	
	1968/69	1975/76	1968/69	1975/76
Northeast	73	78	109	92
North	78	78	89	97
South	83	94	100	104
Centre	120	117	102	108
Bangkok	248	178	133	102[a]
Whole kingdom	100	100	100	100

[a]Includes three additional provinces that are poorer and more rural. Therefore, the drop should not be as drastic as shown.
Source: Meesook (1979).

Table 3. Income distribution of urban households by region, 1975/76.

Household distribution (%)	Cumulative household income share (%)				
	Bangkok	Central	North	Northeast	South
20	10	8	8	7	8
40	24	22	22	19	21
60	41	41	39	35	35
80	64	62	62	59	57
100	100	100	100	100	100

Source: NSO (1975–1976).

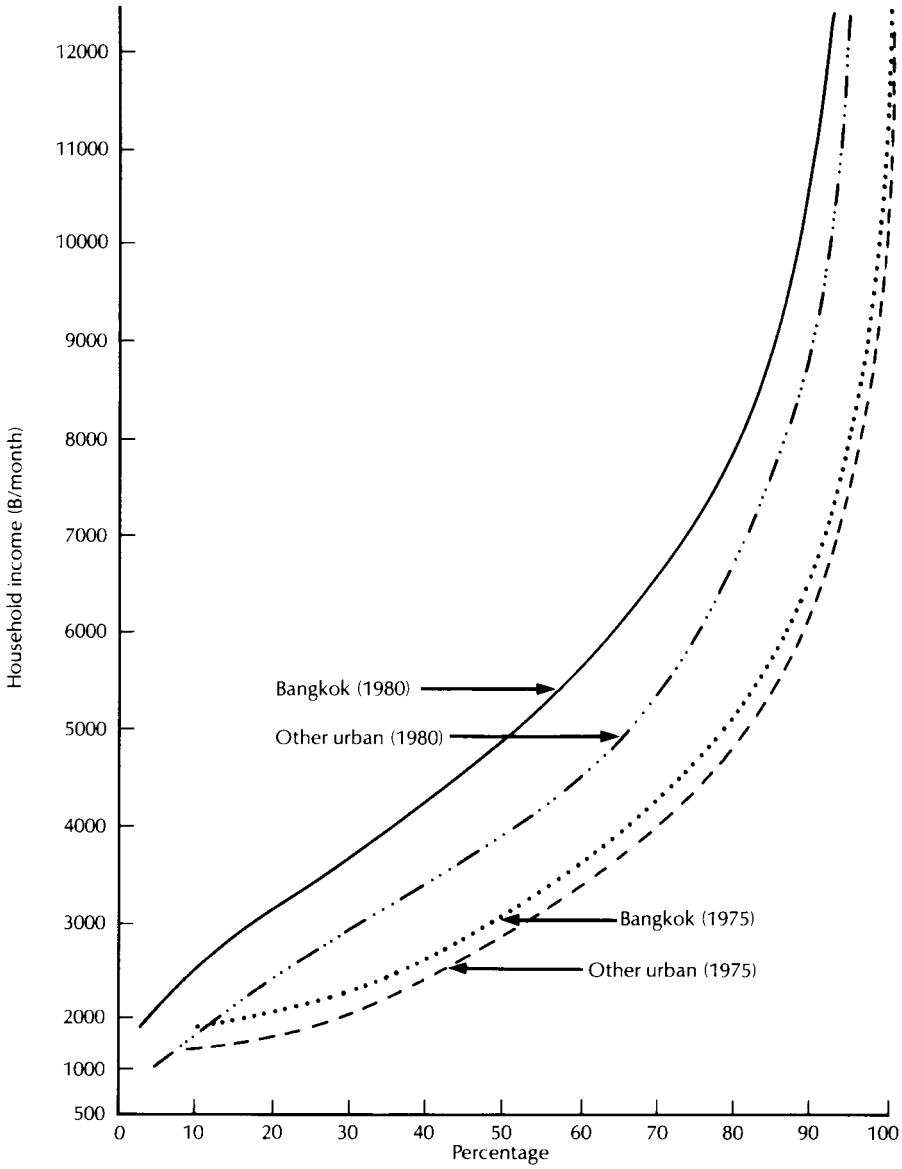

Fig. 1. Urban household income distribution, 1975 and 1980 (projected from NSO 1975–1976).

that standards of housing attainable by all households in any one area would vary greatly, with different types of housing meeting those demands.

The housing supply in any given area consists of a number of subcomponents, with a variety of producers serving the different housing demands of its population. In this respect, the housing market in Bangkok produces the most diverse types of housing available, whereas in most regional cities certain types do not exist because of the lack of demand for them (i.e., condominiums, private rental flats, or squatter housing). Rural areas have the least diverse supply, consisting mostly of occupant-initiated housing for all income groups. Figure 2 elucidates graphically the various housing types available, identifies the source of those supplies, and classifies them by income range of their intended client groups for Bangkok. What is still missing, unfortunately, is quantitative and qualitative information of all the various types of housing being supplied to the market. However, the

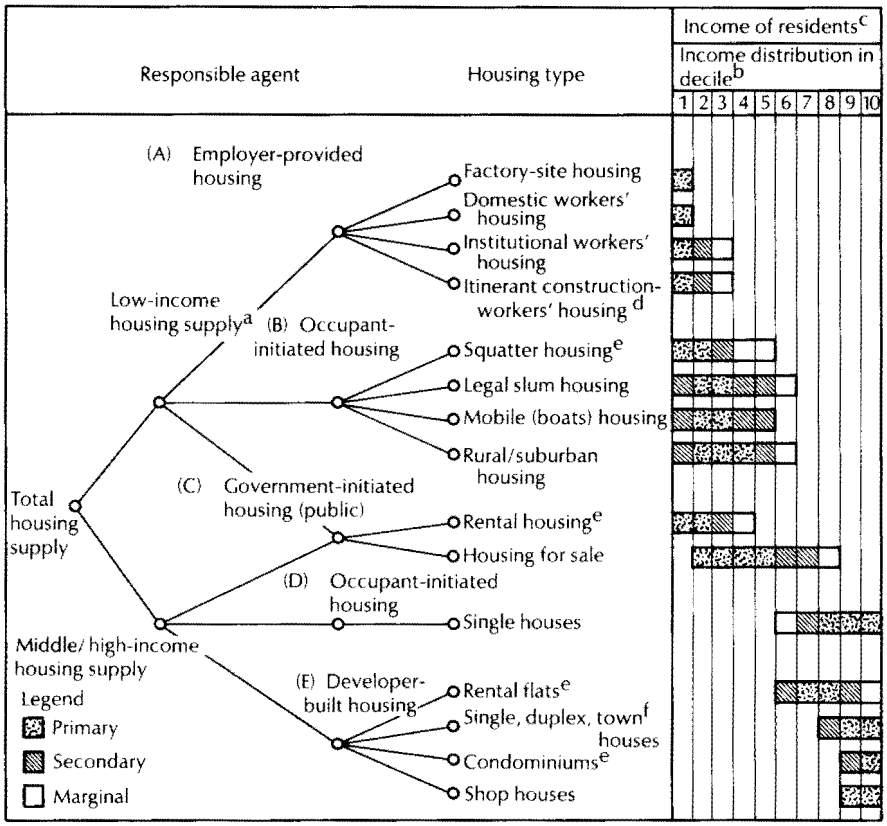

Fig. 2. Housing supply components in Bangkok and other urban areas.
[a]*Adapted from Angel et al. (1975).*
[b]*See Fig. 1 for income distribution of Bangkok and other urban areas.*
[c]*Distribution of housing types by income groups are author's own estimate.*
[d]*Usually no demand in smaller cities, because of short distances involved in commuting, these are usually located at construction site as workers cannot afford commuting costs.*
[e]*Usually no demand or not available in secondary cities.*
[f]*Available in only large cities (80 000+ population).*

number and standards of government-developed housing (category C) is known. More importantly, much research has been undertaken on category B, which is mainly the informal low-income sector characterized by the lowest standards (see Figure 3). Also it is well known that there has been enormous overbuilding in speculative development of shop houses. It has been variously reported that over 50 000 units are vacant and unsold in Bangkok alone, a situation that, if true, would constitute almost 10% of the total housing market and represents a serious misappropriation of capital and other resources of the economy. Nevertheless, more research should be carried out within this framework for more quantitative and qualitative data to provide a comprehensive understanding of the dynamics involved in the total housing market. The low-income housing subsystem must be considered within the context of the total market in which the various subsystems are interrelated.

Housing Quality

Housing quality is defined by the degree of access to utility services, social infrastructure, security of land tenure, building types, and floor space; bearing in mind that qualitative assessment here is based on a comparative concept, and not on any particular predetermined and desirable standard.

Between 1970 and 1976, accessibility to safe drinking water and electricity generally improved in both urban and rural areas (Table 4). With the slowing down of population growth and the vigorous rural water supply

Fig. 3. An example of occupant-initiated low-income housing built in peripheral urban areas, accessible through a dirt road with no drainage, but intermittent water supply is available.

Table 4. Access to utility services of housing stock.

	Distribution of dwellings (%)					
	Whole kingdom		Urban		Rural	
Services	1970	1976	1970	1976	1970	1976
Water supply						
Piped: individual	8.5	11.7	54.7	70.2	1.8	1.6
public	3.9	2.2	19.3	9.2	1.6	1.0
Public wells	31.2	32.2	5.6	4.2	34.9	37.0
Private wells	34.4	33.9	13.2	12.0	37.5	37.7
Others	22.0	20.0	7.2	4.4	24.2	22.7
Lighting						
Electricity	18.9	24.0	86.1	92.2	9.0	12.2
Others	81.1	76.0	13.9	7.8	91.0	87.8

Source: NSO (1970, 1976).

Table 5. Distribution of dwellings by types of tenure in urban and rural areas.

	Distribution of dwellings (%)					
	Whole kingdom		Urban		Rural	
Type of tenure	1970	1976	1970	1976	1970	1976
Owner	85.3	88.6	46.7	47.5	90.9	95.7
Rental	8.0	7.5	39.3	40.5	3.4	1.8
Rent in kind	1.0	1.2	2.9	6.0	0.8	0.3
Free	5.4	2.3	11.0	5.8	4.5	1.7
Unknown	0.3	0.5	0.1	0.3	0.4	0.5
Total	100	100	100	100	100	100

Sources: NSO (1970, 1976).

and electrification projects in the Fourth Five-Year Plan (1977–1981), the 1980 census data, when available, probably will report further improvement. Even though 80% of urban residents had access to piped water in 1976, the distribution between urban areas was uneven. In Bangkok and the regional cities, those unable to gain access to safe drinking water and electricity would be exclusively in category B (see Figure 2). This includes squatter and owner-built housing with legal tenure (rent land) and others such as boat-houses or those located outside the supply limit of the utility service networks. This category of low-income housing is often referred to as the informal sector.

To be the owner of one's shelter is a much-revered goal in Thailand, although other forms of land tenure with varying degrees of security and desirability also exist. Between 1970 and 1976, a marginally high proportion of households owned their own houses in urban areas, whereas the percentage of households owning their lands and shelters improved markedly in rural areas (Table 5). In the absence of the 1980 census data, it is difficult to predict what the situation is now, but it can be expected to worsen with the children of the 1960s entering the housing market and forming their own households. Yet land remains a limited resource.

In the context of urban housing supply, category B (squatter and legal slum housing) constitutes the biggest problem. The former are illegal tenants who need to be near their place of work but cannot pay any land cost, whereas the latter have tenure rights, often only on a year-to-year basis, yet their landlords can revoke the arrangement with little notice. Fortunately squatter housing is not as widespread as implied by the following figures: about 10 000 (1.3% of total housing stock) in Bangkok of which

about 6000 are at Klong Toey Port, 1500 are at Dindaeng, and the rest are in small pockets scattered along public rights-of-way, mainly the canals; 750 (10%) in Songkla; 580 (3.8%) in Chiengmai; and 330 (2.4%) in Pitsanulok, whereas most other cities have none or less than 50 units of such housing.

Between 1970 and 1976, dwellings tended to be smaller in both urban and rural areas although the decrease in household size, from an overall average of 5.7 in 1970 to 5.6 in 1976, was only marginal. Between 1970 and 1976, dwellings with two rooms and less increased for the whole kingdom and for all urban areas; whereas dwellings with three or more rooms became less numerous (Table 6). This trend can be expected to persist in the absence of any major intervening factor.

Studies made on informal sector housing in Bangkok have found that the average floor space of informal sector housing is not necessarily smaller than rental public housing provided by the government (minimum of about 28 m^2/unit for a family of six but often inhabited by 10 or more persons), or some private sector rental apartments despite the superior structural quality of the latter.

Between 1970 and 1976, the number of shelters built of wood, though still predominant in urban areas, declined, with a substantial gain on masonry structures, whereas the situation in rural areas changed little (Table 7). Urban shelters using indigenous and reused materials (5.7% in 1976) would almost exclusively be used in squatter housing, or temporary shelters for construction workers (category A, see Figure 2). By and large, because Thailand is blessed with a mild climate all year round, shelter quality more often than not reflects the condition of land tenure and the tenant's income.

Although it has never been officially established what constitutes poor

Table 6. Distribution of dwellings by number of rooms for urban and rural areas.

	Distribution of dwellings (%)					
	Whole kingdom		Urban		Rural	
Number of rooms[a]	1970	1976	1970	1976	1970	1976
1–2	66.2	76.3	67.4	70.4	66.0	77.3
3–4	25.8	21.5	24.4	25.6	26.0	20.9
Others	8.0	2.2	8.2	4.0	8.0	1.8
Total	100	100	100	100	100	100

[a]Room here means a room suitable for habitation and does not include bathroom, kitchen, storeroom, etc.

Sources: NSO (1970, 1976).

Table 7. Distribution of dwellings by types of building materials.

	Distribution of dwellings (%)					
	Whole kingdom		Urban		Rural	
	1970	1976	1970	1976	1970	1976
Masonry	2.5	3.7	15.4	22.5	0.6	0.4
Masonry and wood	2.3	2.8	8.0	8.3	1.4	1.9
Wood	64.9	64.1	68.6	61.5	64.4	64.6
Indigenous	26.0	24.8	5.2	3.9	29.0	28.4
Deteriorated reused materials	3.4	3.7	2.1	1.8	3.6	4.0
Unknown	0.9	0.9	0.7	2.0	1.0	0.7
Totals	100.0	100.0	100.0	100.0	100.0	100.0

Sources: NSO (1970, 1976).

Table 8. Major urban areas and selected housing data.

Urban areas	Population		No. of households per dwelling unit	Poor-quality housing[b]	
	Number (1979)	Annual growth[a] (1973–1979) (%)		Number	% of total
Bangkok	4 999 500	4.33	1.01	180 000	23
Songkla	74 700	6.87	1.21	1570	20
Had-Yai	92 500	9.51[c]	1.29	860	5
Chiengmai	97 800	0.28	1.32	3940	25
Korat	89 100	1.97	1.11	1713	12
Khon Kaen	89 900	6.60	0.67	83	0.4
Udon Thani	79 500	2.13	0.93	1784	11
Pitsanulok	73 800	0.28	0.83	1180	9
Nakorn Sawan	86 200	11.28[c]	0.79	863	5
Nakorn Sri Thammarat	65 200	4.72	1.10	1340	12

[a]In municipal areas only.
[b]All from Department of Local Administration survey of 1978 except Bangkok data from Slum Upgrading Office, NHA.
[c]Inflated figures owing to expansion of municipal boundary during this period.
Source: Department of Local Administration, Ministry of Interior.

or slum housing in Thailand, the poorest housing in any given area can be classified by simple comparison with the quality of the overall housing of that area. This exercise was attempted by the Department of Local Administration in 1978 for all cities, a selection of which is represented in Table 8. Housing market studies, which included an assessment and survey of slum housing carried out between 1979 and 1981 by the NHA, corroborated the subcomponent in the housing-supply model (see Figure 2).

By and large, slum housing areas are characterized by being of very high densities (100 to 120 dwellings per hectare), perhaps twice as high as the city average; having no tenure rights (squatting); or renting land without contractual agreement. Thus, these areas are uncertain about future security, and are poorly serviced with water supply, electricity, roads, and drains. They are generally clustered near opportunities for employment, invariably are occupied by low-income families belonging to the lowest 20% of the city's income distribution, and occupy shelter structures built of wood and roofed with corrugated iron sheets. Even in cases where land tenure is fairly secure, the lack of credit worthiness and collateral mean that access to long-term housing loans is difficult to arrange. Consequently, residents must rely on savings, loans from relatives, or capital from the informal market at exorbitant rates.

The proportion of poor-quality housing is the largest in Chiengmai and Bangkok, a finding that stands to reason as they are the two most populated urban centres in the country (see Table 8). Chiengmai's population growth is estimated to be close to that of Bangkok, but the figures in Table 8 account for those in the municipal boundary only, which is already quite congested. Moreover, it has the highest incidence of doubling-up of households, averaging 1.32 households per dwelling unit.

Public-Housing Experience

Although the government has been building housing for the general

public for many years, it was only since the establishment of the National Housing Authority of Thailand (NHA) in 1973 that the supply became significant. During the years prior to the establishment of the NHA, only 17 000 units were built by the government, but between 1974 and 1980 about 40 000 units were constructed, exclusive of slum improvement which rehabilitated about 10 000 units of shelters in Bangkok but which did not create new housing stock. Over this period the NHA developed housing units in Bangkok, including rental flats, condominiums, and low-rise housing accounting for about 15.5% of the total 260 000 increase in housing stock. Most recently, however, NHA housing supply to the Bangkok market has increased to nearly 20%.

The government-built housing units have been mostly for lower-income groups, specifically those households earning less than the average (50th percentile of the income distribution), although about one-third is aimed at middle-income earners as well (up to the 80th percentile, see Figure 4). As such, the NHA's annual 20% contribution to the needs of 80% of the population means that many low-income earners cannot necessarily gain access to public housing, and have to rely, as always, on rental housing or on land on which to build their own shelters (category B, see Figure 2).

It has been every government's goal to forestall the increase of slum housing by building higher-standard public housing in sufficient quantity (see Figure 5). Until recently, however, the strategy applied has persistently proven to be counterproductive and this failure to reach development goals can be traced to housing standards and subsidies.

Simply put, standards articulated as being minimum in shelter, floor area, structure quality, infrastructure, and community facilities have been

Fig. 4. Developer constructed middle/high income row houses as shown here would be affordable to those above the 80th percentile in income distribution. It cost roughly US$15 000 per unit of 74 m^2.

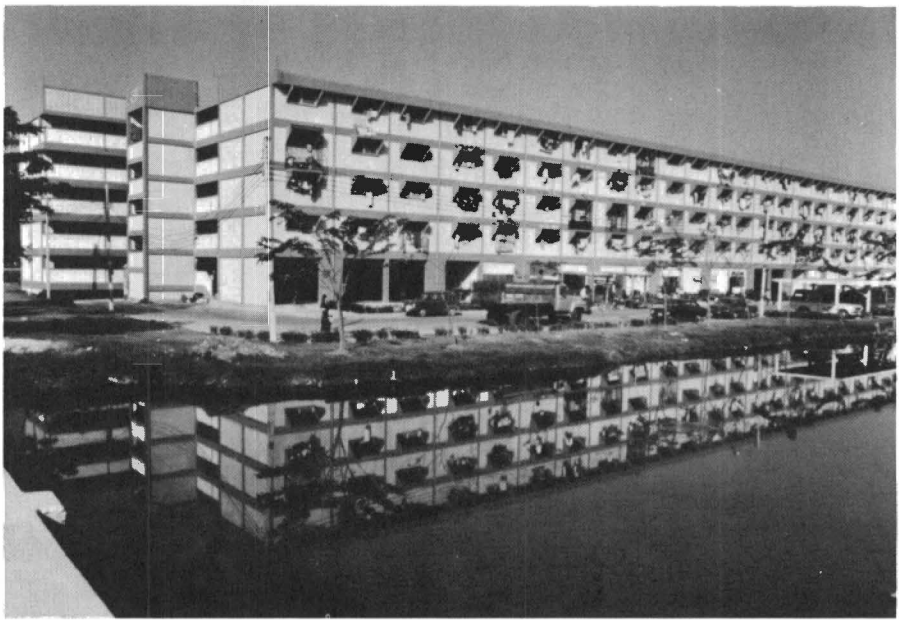

Fig. 5. Typical low-income rental public housing, 5-storey walk-up flats which cost 5 times more than the tenants' affordability. Development cost exclusive of land was US$7000 per 35 m^2 unit in 1980.

much higher (five times or more) than their intended beneficiaries could afford, even assuming that they have access to long-term financing, which they do not normally have unless through NHA projects. Thus, heavy government subsidies have been necessary. In a developing country such as Thailand, where development resources are limited, giving high-standard houses to a few urbanites, even if they are poor, may seem questionable. After all, 80% of the total population live in rural areas, many of which are economically backward and have access to even fewer basic services than the urban slums.

Notwithstanding the argument for rural versus urban, the high-standard housing developed by the government cannot be produced in sufficient quantity for even all the urban poor.

Furthermore, because subsidies have to stop at certain income levels, the higher-income households, which are technically denied access to public housing, would have to be satisfied with a lower standard of housing at equivalent costs in the marketplace. Consequently, a demand for public housing by those with higher capacities to pay is created, and the illegal transfer of tenancy rights — a resource-consuming task for public-housing administrators to prevent — becomes common. The Thai experience on this is that people's ingenuity and collective bargaining power have so far prevailed over the public-housing administration. For those low-income families, key money, which they stand to receive on vacating a subsidized flat, can amount to two-thirds of the government subsidy on that housing unit. The sum transferred sometimes amounts to B40 000 (US$2000), certainly a fortune by these families' standards. In short, the subsidy for housing has been converted partly to a cash subsidy for the

intended families and the rest of the housing subsidy remains for the higher-income group. Therefore, unless a sufficient supply of equally high-standard shelters is created for both the low- and middle-income groups, an almost impossible task in present Thailand, the situation will persist.

Development of Housing Policy

From the 1950s to 1973, public housing was heavily subsidized, including both rental and hire-purchase types. The housing provided was mainly walk-up apartments with fairly modest floor space (30 m^2) provision and high structural quality. The prevailing concept in design was minimum architectural and engineering standards set by technocrats who would not compromise their professionalism for anything less, even if the low-income population was willing to accept less-expensive solutions. Funds were mostly provided through annual budget allocations that were sporadic and, partly for this reason, during the twenty years prior to 1973, only 17 000 units were constructed by the four separate housing agencies.

These agencies were unified under the NHA, which was formed in 1973. One of the main reasons for consolidating the country's housing agencies was to pool resources and develop effective policies and programs for implementation. One of NHA's first efforts at policy and program determination was to set up, in 1974, a subcommittee to prepare NHA's input for the Fourth National Economic and Social Development Plan. Although the subcommittee was multidisciplinary and came from various agencies, members were generally inexperienced and ignorant of the underlying problems. One of the most serious dilemmas was the realization that the NHA was established to accelerate the production of public housing and yet the budget bureau and national planning agency representatives kept reminding the subcommittee of the tight government budgetary situation out of which resources could not be spared for housing subsidies. However, the one seemingly obvious solution to this dilemma, which would be the lowering of standards so that more units could be built with the same amount of resources, was curiously never brought up. The debates became very lengthy with no satisfactory solution in sight until the democratically elected government of 1975 handed down housing-policy directives to NHA.

The NHA was then required to increase its production dramatically and pledged all financial support for a 5-year program (1976–1980) of 120 000 units of housing throughout the country (Yeh and Laquian 1979). The cost of the program was to be borne by loans that the government would repay at 10% each year, and NHA would pass on a portion of the capital as subsidies whereas the recovered part would remain as NHA's much-needed revolving capital. Again, standards were not questioned, making the program very expensive. Those well acquainted with the situation were certain that the huge cost would be the most debilitating of all constraining factors. Also, the NHA was yet to build up the capacity to develop projects and the construction industry had to be readied. To make the program financially feasible, the government had to defer its debt servicing over a 15-year period, passing the burden of repayment to subsequent governments.

After two years of implementation in 1976 and 1977, with 37 000 housing starts, the program was terminated by the government in 1978 as a result of a joint proposal by the National Economic and Social Development Board (NESDB), Budget Bureau, and Ministry of Finance on the grounds that it was too much of a financial burden to continue. At that point the government had already committed to repay B5000 (US$250) million of NHA loans for the program.

At the same time, however, the NHA had decided to experiment with a pilot site-and-services project that would receive little external subsidy and was designed to be self-financing with funding from the World Bank. The rationale was that such projects could be replicated on a large scale because they did not depend on government budget allocations but rather on borrowed funds that would be fully recovered from the occupants. In this case, public investment would be limited to community facilities such as health centres and schools, which the government is already obligated to provide (see Figure 6).

Also attached to the same World Bank loan project, but not on an experimental basis were five slum-upgrading projects, following the government-approved 5-year program to upgrade low-income neighbourhoods. This program is the subject of a separate paper in this volume (Buranasiri, this volume).

Much of the year 1978 was spent on policy discussions within the NHA. In particular, solutions for lower-standard incremental housing were debated at length. The question was how much subsidy should be given because it was clear that a no-subsidy situation (like the project supported by the World Bank) would not be accepted by most NHA technocrats. It was finally concluded that the lowest-income group would receive a sub-

Fig. 6. A new generation of owned public housing consisting of serviced plots with expandable core houses.

sidy for the cost of infrastructure, but not for the housing plot or the initial shelter (core house). This subsidy was graduated to decrease to a minimum at the 50th percentile. It was decided also that if government should require the NHA to build rental flats, the NHA would take no financial responsibilities, i.e., such flats would have to be fully financed by government subsidy. Slum-upgrading projects that were already approved by the government would be included. These projects were intended to help those unable to become homeowners or those who already had housing but wanted to enjoy more secure land tenure, and utility and social services.

In mid-1978, the NHA-prepared policy and program was reviewed by a high-level ad hoc committee chaired by the Prime Minister who rejected the NHA concepts in favour of "nice" housing and clearing of slums — it was the previous government that had approved the NHA slum-upgrading program. However, strenuous efforts, subsequently launched to educate those who had influence on the approval of NHA policy, finally paid off.

Toward the end of 1978, the government approved a 4-year program (1979–1982) that was a somewhat compromised program totalling 50 000 housing units. It included among other targets 5000 units of rental apartments (fully subsidized by the government), and 20 000 units of incremental housing and slum-upgrading projects affecting 26 000 families. The total government subsidy would be limited to B1500 (US$75) million, leaving another B700 (US$35) million of loans, which would be fully recovered from the beneficiaries, to be raised.

As part of this program, about 7000 units (30%) of new housing units would be built in regional cities. It should be noted that housing starts per year (not including slum-upgrading units) had been lowered to about 5000/year compared to the previous program's 24 000.[2] This apparently low target is accounted for by the fact that the new NHA program still had to rely on subsidies (two-thirds of the program cost) although they were vastly reduced (B1500 or US$75 million) in comparison to the previous program. In essence, it was really up to NHA's own standards to determine the number of housing units to be constructed.

Under the current program, two large incremental housing projects totalling 9000 units in Bangkok as well as two more projects in regional cities have been started. Eight more projects of about 500 units each will be launched in regional cities where lands are now being purchased. During the process of project preparation, carried out by the NHA itself, technocrats including planners, architects, engineers, and economists became far more familiar with such issues as affordability, subsidy, standard trade-off between land-use planning, infrastructure, and architectural designs.[3] Moreover, when the pilot sites and services projects were allocated prior to completion the response was generally overwhelming (9000 applicants for 3000 plots over 4 weeks). The choice of various designs was closely monitored for analyzing preferential patterns in accordance with such variables as location, plot size, house design, and infrastructure standard.

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[2]Only 18 000 housing starts per year had actually been achieved in 1976 and 1977.

[3]This process was greatly assisted by UNDP consultants Marie-Agnes and Alain Bertaud who developed models using programable calculators to facilitate calculations that otherwise would be extremely time consuming to perform manually.

Technocrats now realize that with reduced or only cross-subsidies, NHA projects are increasingly in competition with private-sector initiatives in the housing market. This prompted a study by the NHA in August 1980 called *Present Standards and Prices on the Housing Market in Bangkok* largely to understand what type of competition the NHA faces in the marketplace in terms of standards of plot size, infrastructure, shelter, financing available, location, and tenure.

It was found that with the availability of long-term financing for NHA projects, economies of scale of its projects, and comprehensive provision of community facilities, housing thus produced, even with little or no subsidy, is generally superior to similarly valued housing in the private sector.

An intensive training program was launched in 1980 with the co-operation of the Bouwcentrum International Education (BIE) of the Netherlands to familiarize the NHA and officials of other agencies with related functions on the new approaches, notably sites and services and slum-upgrading projects. The first annual international seminar hosted by the NHA, the BIE, and the Asian Institute of Technology (AIT), was held in early 1981, at which representatives directly involved in sites-and-services projects from five countries in Southeast and South Asia presented case studies from their own countries. Comparisons were drawn between project objectives, planning and design standards, and post-completion experiences.

Enriched by that experience and with somewhat more confidence, the NHA will propose its policy and program be included in the Fifth National Economic and Social Development Plan (1982–1986) on the basis of minimal reliance on subsidies from the government. The basic approach is to develop new housing at the rate of 10 000 units per year for those who can afford or want to be homeowners (20th percentile and above). Those who cannot afford to be owners will be assisted through the NHA's slum-upgrading program at the rate of 30 000 units per year. A concensus was reached during high-level multi-agency reviews of NHA policies, programs, and experiences prior to the drafting of the new policy and program. The NHA should operate as far as possible on business concepts and the reduced reliance on government subsidies would mean that the NHA could operate more smoothly and not subject to periodic changes of government priorities as borne out by past experience. Operating along lines of business concepts means that the NHA has to be more efficient. Designers would have to pay close attention to what the target groups require and not what technocrats would like or perceive to be good for the low-income home-seekers. There will be no subsidized rental housing. The sites-and-services projects will require no government subsidies, whereas slum upgrading will be initially financed by the government but the costs will be recoverable indirectly through taxation. The NHA will also be called upon, as it is presently, to develop turnkey housing projects for government agencies including the armed forces and commercial projects to offset some of the deficit incurred in rental housing and maintenance.

Other Significant Developments in Low-Income Housing

Direct intervention by government in improving the quality of low-

income housing supply being still relatively small, the low-income housing supply cannot be considered in isolation from the total market. Therefore, any improvement in the supply of housing production factors will result in market-wide improvement in the housing supply. This section reviews briefly several recent developments.

Little needs to be said on how long-term financing can improve the attainment of initial housing standards. Most low- and middle-income families cannot gain access to this type of financing and often fall victim of speculative developers who have arranged mortgage financing. Speculative housing projects are generally targeted at the high-income groups but even developers have been hard pressed since 1979–1980 to find mortgage financing. As a whole, housing finance institutions are poorly developed, the most active being the Government Housing Bank (GHB) and a few private finance companies. The GHB has only one branch, and needs to borrow for meeting almost all its loans. It does not engage itself in direct mobilization from potential homeowners or other investors. Although in private institutions, mortgage loans must compete with commercial and industrial loans having much shorter maturities, in any tight-money situation such as the present, mortgage financing is always the first to be affected adversely.

Through the initiative of the NHA and with support from the World Bank and UNDP, a major study on housing finance in Thailand has been recently launched. Supervised by a steering committee consisting of the Ministry of Finance, Bank of Thailand, NESDB, NHA, and GHB, experienced consultants are reviewing the current housing-finance situation in the context of the total financial sector. It will project future demands, identify problem areas, and recommend on institutional and procedural arrangements. The success of this effort will have potentially profound effects on improving housing attainment standards for all income groups.

In 1978, a group of concerned professionals, primarily from the Asian Institute of Technology, the NHA, and other individuals in their private capacities, formed the Building Together Project Company for the fulfillment of the following objectives:

a) To supplement low-income housing delivery by developing projects that could be replicated.

b) To experiment with mutual-help principles during the construction process to encourage social cohesion and develop technical skills.

c) To experiment with innovative construction techniques that could be handled by non-skilled prospective occupants.

The project was able to attract financial support from several organizations from West Germany and the Netherlands, amounting to about B7 million (US$350 000), with which 1.6 ha of land for the first project was bought in a suburban residential location to the north of Bangkok.

While designs were developed, screening for qualified tenants was carried out to select the most suitable candidates in keeping with the project's objectives. One in five of the applicants was selected, a reflection of the popularity of the project in providing freehold-ownership housing for low-income families. Those selected were then required to attend a 10-session education program covering such subjects as familiarization among themselves, future responsibilities to the group, financial issues,

Fig. 7. The completed first group of mutual-help low-income housing with innovative construction techniques. The market value for these (60 m²) plots and houses is now much higher than that beneficiaries are paying installments for.

credit unions, and building techniques to be used (Angel and Vorratnchaiphan 1980).

The basic infrastructure including a flood-protection barrier surrounding the site, a spine road, water supply, walkways, and drains was constructed by a contractor, after which the first group of 16 families began work on-site. The first task was to prefabricate building materials such as piles, concrete interlocking blocks, precast reinforced-concrete floor joists, and door and window frames. The time that each family contributes to the project is costed at B6 (US$3) per person-hour with a minimum input of 1500 hours being mandatory for each family. The labour contribution would then be deducted from the price of the house and land.

The first 16 houses took 10 months to complete, whereas the second group took 9 months, still taking much longer than the planned target of 6 months, mainly because most families can only work on weekends and during some evenings. The time and cost of travelling to and from the site from their workplace and homes was a problem. Furthermore, certain members of a family could earn more money outside doing regular or other jobs creating a financial disincentive to work on the project. In the latter phases, the organizers have permitted hired labourers to speed up the building process. They have also been able to achieve greater labour input levels per family, but the productivity level was not yet satisfactory. Otherwise, the construction techniques worked well because the building materials were relatively cheap and easy to assemble. It worked out to be B900 or US$45/m² as compared to B1500 or US$75/m² for conventional building, inclusive of labour costs (see Figures 7 and 8).

Fig. 8. A mutual-help building "team" which consists of about 20 eligible families per cluster of houses. Average labour input has been about 40 person-hours/week/family. Lately, hired labour was used in manufacturing materials and assembly to accelerate the building process. Note the mortarless interlocking hollow concrete blocks which can be assembled with little skill.

In subsequent projects of this kind, prospective residents should be permitted to live on-site in temporary shelters or core houses complete with infrastructure constructed by contractor. This would eliminate the travel time and cost and the labour input problem, and very importantly would save rent that they would otherwise have to pay for their former shelters. Furthermore, the project's subsidy for the cost of infrastructure, justified in the first project because of its experimental nature, should be eliminated in future projects if these were to be replicated in larger numbers.

The tangible benefits of mutual help should also be evaluated because the mutual-help process requires more support organization. This would be a costly project overhead if the costs are to be borne by the residents in future projects. Perhaps self-help or spontaneous mutual-help processes should be experimented with, and adopted if found to be more efficient.

There is little doubt regarding the importance and usefulness of the innovative concepts of the Building Together Project, and much can be learned from it. Moreover, its goal of creating an organization capable of developing projects continuously on a commercial but non-profit basis for the low-income families should be persistently pursued.

Conclusion

In the historical perspective of low-income housing development in Thailand, the last several years have witnessed active development and

progress in both physical implementation and policy adjustments in public housing. A better understanding of individual initiatives in the low-income housing supply and its relationship to the overall housing market has led to a break with the past policies for low-income housing. There has been a new recognition that existing low-income housing is largely acceptable — economically, socially, and politically. On that recognition measures are to be found to improve the lot of the inhabitants. This objective is achieved curatively through its slum-upgrading programs, preventively through direct intervention by government developing low-income housing, and through indirect measures to improve market performance and efficiency, such as increasing accessibility to housing finance. Lastly, direct government intervention in the low-income housing supply can be achieved more effectively than ever before through a more pragmatic approach with respect to subsidies and building standards more compatible with the levels of housing demand and resources available in the country.

Future policy development and adjustment will no doubt take place, but perhaps in a less dramatic manner than that experienced recently. It is believed that the NHA is following a more rational policy direction. The objective will be further enhanced by the increase in activities yielding more intensive experience and data on low-income housing.

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Urban Growth, Housing, and Slum-Upgrading Programs in Bangkok

Pree Buranasiri

In 1980, Thailand had an estimated population of 46.96 million. During the past two decades, the population has been increasing at approximately 3%/year. It was observed that the population increased sharply during the period after 1950 due mainly to the decrease in the average mortality rate.

Since 1950, the urban population has been growing at a rate of 5%/year and, as a proportion of total population, increased to 17% by 1976. These figures reflect all the 118 municipalities, which include cities with 30 000 or more inhabitants and a minimum density of 2000 persons/km^2. Bangkok, with a total population of 5.1 million in 1980, representing 63% of all urban population, dominates the urban hierarchy. It is estimated that Bangkok, according to the 1980 census data, is 45 times larger than the next largest city, Chiengmai.

In 1977, a World Bank study revealed that although urban households account for less than one-fifth of the total households in Thailand, they account for a great deal more in terms of contribution to productivity, measured in the Gross Domestic Product (GDP). The average income per capita of urban households is much higher than that in the rural areas. Bangkok alone, with only about 10% of the total population of Thailand, contributed about 27% of GDP. Infrastructure is normally better provided in the urban than in the rural areas. Bangkok enjoys the highest level of public services, with 70% of its residents having access to piped water, and 90% access to electricity. Bangkok is similarly better provided in education and health.

However, as a result of Bangkok's rapid population growth and the limited private and public supply of conventional housing, slum settlements have proliferated. About one-quarter of the city's population lives in slums scattered throughout the city.

Housing in Bangkok

It is recognized that chronic housing shortages have characterized Bangkok for some time. Between 1974 and 1980, several estimates of housing needs were made by the National Housing Authority (NHA) for the purpose of assisting housing policy and planning. From 1976 to 1980, 2400 units per year were planned. The private sector including self-built housing was estimated to provide another 100 000 units by 1980. After 4 years of planned implementation, the NHA was able to complete 40 000 units of housing.

Table 1. The housing targets in Bangkok (1981).

Projects	Location	Number of units
New housing community (sites and services)	Bangkok Metropolis	70 000
	Regional cities	14 000
Slum upgrading	Bangkok Metropolis	26 000
Total		111 000
Special welfare-housing project	Bangkok Metropolis	7966
	Regional cities	800
Shopping centre projects (in housing community)	Bangkok Metropolis	Flexible
	Regional cities	64

The type of houses built for the low-income population in this program were one-room walk-up flats, 35 to 40 m^2/unit built with concrete blocks and a concrete frame. These units were generally for hire-purchase. Emphasis was given the provision of a good environment, community facilities, and infrastructure.

Because the 5-year program applied high standards, heavy subsidies (about B13 466 (US$673) million) were required over the life of the program. The government agreed to finance it whenever the NHA borrowed development funds from a government-approved source. The government repays the loan, principal, and interest in excess of 7% in equal installments over 10 years, and, in this way, supports NHA's revolving fund. Due primarily to the large and escalating subsidies, the cabinet ordered a halt to the program in December 1977, and reviewed the subsidy issue with the view of reducing government expenditure. In the meantime, the NHA had begun drafting a series of proposed policy changes based on an analysis and evaluation of the ongoing program. A new policy and development plan called "Priority Plan 1979–1982" was approved by the cabinet. The plan called for the application of sites and services and slum-upgrading approaches to provide housing at lower levels of subsidy. The target of the priority plan is summarized in Table 1.

Slum Problems

Resulting from the dramatic increase in population of greater Bangkok, many problems have emerged that threaten the survival of the city. Among the more important of these problems are slum housing and squatter settlements. Like most other large urban centres, Bangkok's slum settlements have been regarded as low-income residential areas resulting from inadequate housing for the poorest sectors of the population.

Through the NHA, the government has attempted to come to grips with slum problems by focusing on improving the quality of life for the urban poor. Generally, Bangkok slum areas have maintained an economically and socially sound housing stock, the conditions of which may become acceptable with improvement. Since 1977, when the slum-upgrading program became part of the national housing policy, more needed to be learned of slum areas.

Slum Formation

Urbanization and migration studies have shown that the influx of population from rural areas to Bangkok in the period between 1947 and

1956 greatly changed the city. Some 532 400 persons moved to Bangkok, four times the number that moved to rural areas (Litchfield et al. 1964). The rate of immigration over this period was almost double the present rate. Although there was no study of these migrants in relation to their new settlements, it was found that they tended to cluster in the less-expensive areas (such as the Crown Property Department land for which they could pay low rent), the existing congested housing areas, or on unused government land, where they squatted close to job opportunities (Chancharonsook 1979).

Many factors have been conducive to creating slums. Firstly, land in Bangkok's inner city area is normally negotiated at a very high price. Although competition for land in prime locations is keen, numerous pieces of government-owned lands have not been economically and properly used. For example, on the once-vacant piece of land of about 100 ha that belongs to the Port Authority of Thailand, encroachment began as early as the 1950s, slowly at first, and later turned the whole area into a crowded, and eventually overcrowded, squatter settlement. The number of squatter families grew from a mere 100 plus families to more than 7000 families in 10 years.

Secondly, slums can also be created through proper and legal arrangements. In most cases, crown, temple, or private land is divided and rented in small parcels (200–300 m^2) to tenants at a very nominal rent. This low rent coupled with prime location with respect to job sites has encouraged the original tenants to subdivide and sublet the land to the other tenants. It is not unusual to find that such a process repeated itself many times until no empty land was available. Thus, the process gradually turned low-density to high-density residential areas and eventually into slums.

Health conditions in the slum communities reflect the squalid environmental conditions and the general poverty. A survey of 108 slum communities, carried out in 1976 by the NHA, indicated that 19% of the families had a member sick at the time of the survey. In a study of King Petch, a major slum in the centre of the city, 44% of the families had a member sick during the month prior to the survey. The major types of illness reported by the residents were colds and skin diseases, but according to local nurses, diseases endemic to the area also included malnutrition in children, intestinal infection, and respiratory diseases.

Owner occupation was the most prevalent form of house tenure. In King Petch, for example, 55% of the houses were occupied by owners. Houses frequently serve commercial, and small-scale industrial, as well as residential purposes. In King Petch, about 30% of the dwellings were used in this manner including small-scale processing or manufacturing on subcontract with larger concerns. Incomes were low, and unemployment was relatively low and short term.

Slum-Upgrading Program

As mentioned earlier, a change in government housing policy in 1978 resulted in an effort to upgrade the slums. An evaluation has revealed that several key factors led to this new policy. Firstly, the continuation of primacy of the Bangkok Metropolitan Area (BMA) is a magnet that attracts

large numbers of rural migrants toward Bangkok. Also, economic and other hardships which prevailed in the countryside could not be controlled. Secondly, the backlog of housing in the BMA persisted and remained unsolved due partly to the shortage of financial allocation for housing by the government. Private housing does not normally reach the poor. Thirdly, general economic hardship contributes to the proliferation of slums in the city. Proximity to places of employment has been an advantage of slum living. Lastly, slum housing is regarded as structurally sound and can be used longer. It has been estimated that existing slum housing is worth approximately B1400 (US$70) million. Eradication and destruction of such houses is considered to be unwise and wasteful.

Slum improvement is a strategy of improving physical, social, and economic conditions with a minimum of expenditure. It is aimed at ameliorating problems of low-income earners and improving the environment, public health, and services in such communities.

At the present time slum-upgrading implementation programs are under the priority plan (1979–1982) of the NHA. This plan concentrates on communities with low-income people earning less than B2500 (US$125)/month. The project is financed by the government in the form of an annual budget allocation and loans from the World Bank.

In carrying out slum improvement, at least four criteria have been taken into consideration. Firstly, areas selected for a slum-improvement program will continue to be designated low-income residential areas. Secondly, improvement of public utilities, services, etc. should be undertaken in cooperation with the other relevant government agencies. Thirdly, a holistic approach combining improvement in land tenancy, physical infrastructure, and socioeconomic programs is adopted. Fourthly, cooperation should be sought from government agencies who own land on which slums stand to assist with provision of land tenure to slum residents.

A variety of goals are pursued in a slum-upgrading program including the following:

- To rationalize the existing services and promote the installation of water and electricity;
- To improve the living environment such as access, drainage, etc.;
- To increase directly or indirectly income-generation opportunities;
- To encourage savings through improvement of the residents' dwellings;
- To provide programs which will ensure the security of long-term land tenure;
- To maintain the flexibility in providing low-cost housing; and
- To avoid government commitment to direct construction of housing.

Slums may be improved in three ways. First, they may be upgraded as permanent residential areas. This involves the provision of public utilities and community facilities and improvement in socioeconomic conditions and land tenure. Secondly, they may be upgraded as temporary residential areas which will be used for later and possibly other development. Thirdly, slums may simply be designated for clearance. This means that they will make way for new construction or land-development programs.

Slum-Improvement Programs

Physical and Environmental Improvement Projects

These projects are basically attempts to deal with infrastructure and environmental problems through improving and constructing of necessary public infrastructure for slum dwellers such as roads, walkways, drainage, water supply, and electricity. Moreover, the program also seeks to improve services such as the garbage-collection system and landscaping. Internal security in the slums is also improved by reducing fire hazards through a fire-extinguishing system.

Social- and Economic-Improvement Projects

The aims of these projects are to increase, directly or indirectly, the income of slum dwellers. They provide the residents not only with social services that cannot be acquired by themselves such as schools, health facilities, security, parks, and recreation; but also various assistance programs in savings and debt management; drug abuse, occupational and retraining assistance; sanitation, health, family planning, crimes and delinquency, etc. The various components of these projects are implemented by setting up community organizations. Planning of the 17 social and economic improvement projects has been carried out in cooperation with other government agencies such as the Bangkok Metropolitan Administration and Family Planning Association.

The projects are being pursued over the long term and most likely will result in better living and social conditions.

Land-Tenure Project

Secure land-tenure arrangement is the primary goal of a successful slum-improvement program. Legal arrangements in slums on private land mainly take the form of 1-year leases renewable by the landlords. In the case of government lands, leases normally extend from 1 to 5 years depending on individual circumstances.

The tenure arrangement project emphasizes the security of tenure, and in the case of privately owned land, landlords are asked to extend a medium- to long-term lease to tenants. Ideally leases should extend to a 30-year term if possible.

Program Implementation

When the slum-upgrading policy and program was formulated in 1977, 26 000 dwelling units were to be upgraded during the 5-year period between 1978 and 1982. By the end of 1980, 5121 houses in 10 slum areas had been upgraded. At the same time, in 21 other slums designated in the 1979 program another 4181 dwelling units were under construction. In 19 other slums, 5089 dwelling units were ready for construction under the 1980 program. In 1981, 10 527 more dwelling units in 26 other slums were in the planning stages. This brought the total number of houses being upgraded

or planned to be upgraded to 24 918 units.

Throughout the implementation program, numerous problems have emerged, some of which have been manageable whereas others were more difficult. Among the major problems were land acquisition, the lack of understanding and cooperation from slum dwellers, and physical and socioeconomic problems.

Land Acquisition

Land acquisition has been a crucial factor for any slum-upgrading program. In Bangkok, where slum settlements are found to be on both the government and private land, negotiation to obtain consent of the landlord to improve a slum has been difficult and time consuming. No serious difficulty has been experienced with respect to government or the semi-government owned land.

Privately owned land is more difficult to acquire and the process is more uncertain. Landowners have been afraid and reluctant to allow their slum land to be upgraded. The reasons for this unwilling cooperation are understandable because upgrading means continued occupation by slum dwellers. Upgrading also reduces the opportunity of landlords to make more profitable future redevelopment. In some instances, after land acquisition had been completed, the original owners sold the land to new owners who refused to allow the slum land to be upgraded at a later date.

In practice, a lawyer from the NHA is sent to negotiate with the potential landlords as soon as a suitable slum land has been identified. The process can last a long time depending on the number of landlords involved, the size of land and its location, and the potential future uses of the land.

Lack of Understanding and Co-operation

At the time of implementation of a slum-upgrading program, reactions from slum dwellers have been observed to be lukewarm. Slum residents fear that upgrading is only a disguise for eventual eviction. Furthermore, the program originally involved direct and partial cost recovery on certain infrastructure investments from the residents. It was not until the reversal of the direct cost recovery policy and an intensive familiarization campaign that the residents became more cooperative and less hostile toward the program.

Physical Problems

Numerous minor physical problems have been encountered in all of the areas of slum upgrading. These problems are themselves a reflection of the overcrowded conditions in the slums. The expansion of roads and walkways, for example, means the inevitable removal of obstacles and properties which happen to be located within the needed right-of-ways.

Drainage constantly poses a major problem. Due to the fact that almost all slum lands occupy unfilled low-lying land and have become waterlogged, the draining of discharged water is still an insoluble problem.

Socioeconomic Programs

Another source of problems is related to the socioeconomic projects

initiated by NHA that are expected to be maintained continuously by other government agencies. It has, however, been observed that budgetary constraints on the various agencies are responsible for most of the problems. Co-operation in the implementation of these projects leaves considerable room for improvement.

Conclusion

It is generally considered that housing problems in Thailand, even in the BMA have not yet reached a critical stage. Unlike some other big cities of the region, where a large number of people squat on public land, Bangkok's residents still enjoy relatively easy accommodation through rental or outright ownership. This trend may not continue for too long, for with accelerating urbanization, urban-housing problems are becoming more critical. The expansion of housing programs and policy must continue.

Slum upgrading has now been accepted as a means of providing housing for the poorest sectors of urban population. At the same time, proliferation of slum settlements must not be encouraged. It should be emphasized that the slum-upgrading program, as an alternative to housing construction, emerged out of necessity. All efforts should be employed to prevent the large-scale rural–urban migration that has been a main cause of the urban-housing problem.

To provide an example of how the slum-upgrading program is carried out, the King Petch project has been selected and is described in the annex.

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Annex: King Petch Improvement Project

Long part of Bangkok, King Petch has been in existence for many years. Cambodian Muslims first migrated and settled in this area some three generations ago, giving it its previous name of Kampong Cham, or Cambodian community. Of the three parts of King Petch, Ban Khrua is the older settlement within King Petch. For years Ban Khrua has been known for its silk-making and is situated directly across from Jim Thompson's famous house on the canal. In 1964, the building of the present Charoenphol Road opened up the area, and has apparently had more influence on the development of Wat Phrayayang and Charoenphol (the other two parts of King Petch) than on Ban Khrua.

Although the area is about evenly divided by religion, Islam greatly affects the social organization within King Petch. The mosque acts as the centre for community activities, a source of social and economic support, and a place from which to borrow kitchen utensils and other facilities for

group gatherings. The head of the mosque is elected for life or until he resigns. The mosque committee generally consists of 15 voting persons elected every four years. Women are generally not as active in the religion although older women tend to be more active.

King Petch is conveniently located near jobs, markets, several bus routes, and recreational areas. The major fear of the occupants is fire not only because of the types of house construction, but also because of the possible tenure changes that may occur after a fire in that the area may, from a landowner's point of view, be conveniently cleared. Social control is strong and local methods of security are effective; punishment of burglars is usually exercised before reporting to the police.

Although no direct information is available, Wat Phrayayang is generally considered as an area with drug addicts. The area has transient students, and others moving in and out, and, generally, more migration is directed toward this area than to the other parts.

Physical Conditions

Poor drainage characterizes most of the region in which Bangkok is located, and King Petch is subject to flooding. However, it is seldom subject to extended periods of flooding. The residents of King Petch have overcome all but the most severe flooding by building their houses and walkways above flood level. During the dry season the soil fails to dry out because surface water draining from septic tanks and other waste sources is trapped in the natural drainage areas by garbage. When the rainy season comes the rain adds to surface water fostering stagnant water, mosquitoes, odour, and other environmental problems. Wat Phrayayang has the most fill and is about 2.0 m above mean sea level (msl). Ban Khrua is about 1.7 m above msl in the northern half of the area and about 1.5 m in the southern half along the canal. Charoenphol is in the lowest area and is about 1.5 m above msl throughout. The water table is about 1 m below the surface but varies from wet to dry season.

The three areas of the community of King Petch, consisting of about 80 rai (12.7 ha), are situated along the formerly important canal Khlong Sanseab. Although it appears crowded, the density is considered medium by Bangkok standards. Generally everyone has water and electricity, but some 36% of the houses do not have direct piped water and some 24% do not have metered electricity. It is an area of mixed residential, commercial, and light industrial use.

Social and Economic Aspects

Family Conditions

In a recent survey, the average number of persons per dwelling was 6.8 persons and the average family size was 5.6 persons. Some 68% of the heads of households were men, 74% were married, 51% were Buddhists, and 46% were Muslim, and 28% had no formal education. Primary occupations of the heads of households were salesworkers, craftsmen, production workers, laborers, and service workers. Primary family income was

about B3356/month (US$17) (1978). Sixty-five percent of the families spent less than B1000/month (US$5) on food including between B100 and 200 (US$0.50 and 1.00) for rice. Expenditure on housing was relatively low, representing less than 10% of the family income.

Housing

Of the dwellings, which averaged about 25 years old, 66% were separate dwellings, 9% were family dwellings with rental rooms, 20% were wooden row houses, less than 1% were temporary buildings, and 4% were other. The houses are generally constructed of wood with corrugated iron roofs.

Community Aspects

About 70% of the heads of households thought the community was a satisfactory place to live, whereas 13% rated it as average, and 16% found it non-satisfactory. Over 75% thought that community cooperation was good, and some 80% were involved in community-oriented projects. Most were long-term local residents: 70% were born in the central region, 47% in Bangkok Metropolitan Area (BMA), and 13% in King Petch.

Voluntary associations of various types were found in King Petch; however, their resources to solve social problems were limited. For example, there was a Youth Improvement Association in Ban Khrua that needed books for its library.

In recent years, residents of King Petch have made numerous improvements to their walkways and have assisted others in house construction. Moreover, an informally organized fire-protection system exists and a night watchman service, paid for by the residents, has been organized. Assistance is given at times of funerals and for those whose houses have been destroyed by fire. These aspects point to the need for significant community involvement in the planning and implementation of specific improvements.

Work

Most persons employed did not travel more than 30 min to work. Some 30% of the people felt it necessary to open a shop at their home to increase their income, and some 28% stated they would like additional work to increase their income. Only 14% wanted to change their occupation. During 1980, about 50% of heads of households took a vacation and most missed work less than 10 times.

Health

The survey reported that some 44% of the families had a member sick during the past month. The major types of sickness were colds and skin diseases. Local nurses indicated the diseases most common in the area are malnutrition in children, intestinal infection, respiratory diseases, and skin diseases. Family-planning workers usually visit most houses and advise women on methods of birth control, but, although 78% of the respondents indicated that they believed in family planning, only 25% practiced birth control.

Planning for Improvement

The major physical problems faced by the community are: the lack of adequate drainage; inadequacy of the internal circulation network now composed of narrow, unstable wooden walkways; intermittent water-supply; the lack of a refuse-disposal system; and inadequate fire protection. No schools or clinics are located within King Petch, but its inhabitants have access to several such facilities located within walking distance.

Improvements are envisaged for the King Petch area through several projects:

(a) the provision of secure land tenure to existing residents through long-term leases;

(b) improvement to infrastructure including the construction of new wooden and concrete walkways, the creation of an adequate drainage system, upgrading the water network to permit a substantial increase in water quality and consumption, the creation of a system for collection and disposal of garbage, and improvement of the fire-protection equipment;

(c) the provision for two primary school or multi-purpose buildings, to be constructed by NHA;

(d) small-scale business loans to local enterprises for the expansion of existing, or creation of new, businesses (the average loan will be around B2500 (US$125)); and

(e) social support programs to include adult training and community organization, and a participatory program to reinforce community self-help programs.

So far, two sites on government land have been selected for community facilities at King Petch, and it is envisaged that two schools or multipurpose buildings will be constructed by the NHA, requiring the relocation of five families within the slum area. Assurances have been obtained during negotiations that the relevant agencies will staff and operate the facilites.

Financing

The King Petch project will be implemented by using a World Bank loan. This loan, which will finance 50% of the total project cost, was made to the Royal Thai Government which will pass about 77% of the bank loan on to the NHA as a loan at 7.5% interest over 20 years with 5 years grace. The total improvement budget for this project is B26.98 (US$1.35) million.

Project Implementation

Physical Improvement Program

Plans to upgrade the physical condition of King Petch include the construction of public utilities such as walkways, drainage systems, garbage collection, water, electricity, and two community centres. To implement these kinds of projects, the NHA has to coordinate closely with other concerned agencies. The community advisory committees will be given an opportunity to review preliminary designs for improvements to infrastruc-

ture. The engineers on the team responsible for the design will also supervise the construction by contractors. They will work closely with the advisory committees to secure community cooperation during construction, which is likely to disrupt normal circulation patterns in dense settlements with narrow passageways.

The construction work will be completed by local contractors through a bidding process operated by the NHA.

Socioeconomic Program

To improve the employment opportunities and earnings of slum residents, projects to provide job training, credit, and technical assistance to small businesses will be run in the slums. The National Institute of Skill Development (NISD) will prepare a mobile course in a skill area (e.g., small-motor operation and maintenance) identified jointly with the NHA. In other mobile courses run by the NISD, two or three instructors have offered 30 to 60 hours of training. Community workers from the NHA will also help slum residents to seek places in vocational training courses offered by the NISD and the various divisions of the Department of Industrial Promotion (DIP) outside the community. These and other projects will be financed out of the agencies' normal operating budgets.

Loans for small businesses in the slums will be made by Krung Thai Bank (KTB). NHA community workers will identify and screen existing slum businesses that could use small loans to expand their operations. Prospective borrowers will be referred to KTB, which will assess their proposals and make the loans.

Family-planning services will be provided in the slum by the staff from BMA health centres and the Family Planning Association of Thailand (FPAT). The BMA's public health services are supported by the Family Health Division of the Ministry of Public Health which provides in-service family-planning training for paramedical staff, birth-control supplies and educational materials, and technical support and supervision. The FPAT will supplement the work of health centre staff by conducting family-planning campaigns and population awareness activities in project areas. They will work closely with BMA staff, NHA community workers, and the community advisory committees. The family-planning services will be financed out of the normal operating budgets of the BMA and the FPAT.

A day-care centre program will be organized and operated by the NHA and the concerned agencies, for example, the Association of Universities, Women of Thailand, and the YWCA. All the children will be selected for the program before the day-care centre project is operated.

A mobile medical clinic is a priority project for the slum upgrading program. The project will be done in cooperation with the BMA medical team.

Urgency of a Slum-Improvement Program in the Philippines

National Housing Authority

Like many other developing countries, the Philippines has experienced difficulties in providing adequate housing to a large proportion of its population, particularly the economically disadvantaged in the urban areas. A recent NEDA publication[1] has already addressed many issues relating to various aspects of housing including finance, policy, need, and physical design. This paper focuses on recent programs of slum improvement and highlights developments not covered in the previous volume.

Prior to the dissolution of the various agencies concerned with housing and the transfer of all housing functions to the National Housing Authority (NHA) in 1975, the response to the formation of squatter and slum areas was to relocate families to sites distant from urban cores. These sporadic drives to clear slum areas have not been successful, and have served only to disperse families into smaller pockets of squatter communities elsewhere. Relocation to the urban periphery not only causes physical and psychological displacement, but leads directly to increased household expenses. Not only do the expenses of traveling to work increase, but also the economic opportunities fall drastically. As a result of these pressures, the poor who are affected by such programs frequently abandon their structures and plots and gradually return to the cities. Past experience shows that moving families out of the city is not enough. An example is that of squatters who were moved into the Sapang Palay resettlement site, 32 km from their original homes. Because only a small minority of the resettled squatters were able to find jobs near the site, 40% had returned to the city after only a year and a half.

Government policies adopted recently reflect a more pragmatic approach to the problem of slums. These policies are aimed at stimulating housing by making utilities, public transport, and social services more available — rather than undertaking actual construction of units. The approach is based on the premise that, if the government provides basic infrastructure services, regularizes land tenure, and where possible, provides cheap materials, the residents will build acceptable accommodations. Underlying the concept is the ability of the government to mobilize and coordinate several independent agencies and enlist their resources to undertake respective components of a project.

Called the "environment improvement" approach, slum upgrading and complementary sites-and-services projects have been offered as an

[1] *Housing in the Philippines*, Special joint issue of *NEDA Journal of Development*, Vol. 1 & 2, Nos. 2, 3, & 4 (1974–75).

alternative to the "housing deficit" approach of public housing. In essence, slum improvement recognizes that the more urgent problems of slums do not lie in the dwelling unit but rather, in uncontrolled human wastes, polluted stagnant water, threats of fires and floods, and inadequate social amenities.

The Philippines' initial venture into non-conventional housing began with the Tondo Foreshore and Dagat-Dagatan Urban Development Projects, intended to serve as a model for replication in similar settlements in the country. On 11 June 1977, two related pronouncements on housing policy made possible the replication of the pilot project in blighted communities. Such projects are individually on a much smaller scale than that of Tondo, but require the same wide range of services.

Presidential Letter of Instructions (LOI) No. 555 facilitated a nationwide Slum Improvement and Resettlement Program (SIR) whereas LOI No. 557 defined the basic components of the program:

> ". . . basically the upgrading or introducing where there are none, basic community facilities and services such as roads, footpaths, drainage, sewerage, water and power systems, schools, barangay centres and clinics. A complementary socioeconomic program including but not limited to health, sanitation, nutrition, manpower training, family planning and economic opportunites . . ."

In approaching slum improvement, the government has depended on various independent agencies to deliver the housing services needed by the community. The key agency that carries the major tasks is the NHA. A vital feature of the housing program is that it allows the community to participate in the process. The people are involved in reshaping their environment through their initiative to undertake improvements and at the same time a new range of housing services is provided.

As housing takes on a new meaning by expansion from mere housing to include the improvement of the total environment, community services, and even employment, the task becomes more complicated. The measure adopted is the allocation of project components to separate agencies, an approach that simultaneously answers the need of a comprehensive range of services and reduces the financial difficulties of implementation. This arrangement admittedly has its shortcomings, particularly in terms of coordination and participation of the various agencies executing the project. This is to a large extent offset by the overall responsibility assumed by the NHA which ensures policy formulation, coordination, and provision of funds.

The Zonal Improvement Program (ZIP)

Program Scope and Content

The primary objective of the Metro Manila Zonal Improvement Program (ZIP) is to improve the environmental, employment, and general living conditions of an estimated two million urban poor residing in blighted communities all over the metropolitan area. The existing problems have persisted for years and can only be resolved gradually. Nevertheless, substantial resources will be required for ZIP if it is to succeed, and 10 to 15

years is estimated to be a realistic period over which to carry out such a program.

The first phase of ZIP was intended to cover 20 to 25% of the total slum-improvement program in Metro Manila over an implementation period of 3 years. This would have required an investment of P536 (US$71.5) million to ZIP along with sites and services development. Subsequently, the financial implication of this program was discussed, and a reduced program was approved for implementation.

Program and Project Costs

The program with its costs was formulated in conjunction with the local governments of Metro Manila (Table 1). All projects were previously identified as designated ZIP sites, and due regard was given to local authorities' expressed priorities before determining the phasing of projects. The reduced ZIP then amounted to P320.2 (US$43.3) million over a 3-year period.

The ZIP will benefit 29 000 families, and at least 13 project sites covering 156 ha will have been developed by the end of the program in 1983 (Table 2). The ZIP projects will be undertaken in phases according to a set of site selection criteria:

- the worst environmental conditions including lack of water and sanitation facilities, flooding problems, and high densities;
- areas of lowest income;
- potential for linkage with off-site infrastructure;
- capability of local government to undertake the project; and
- existence of an initial link with the community.

Physical improvements include secure land tenure, access to footpaths, individual or communal water supply, sanitary toilets, surface water drainage, minimum road construction, street lighting, and a house-improvement loan. Social services include the provision of primary schools, clinics, barangay (community) centres, and commercial areas or

Table 1. Total estimated cost for the Zonal Improvement Program of the Third Urban Development Project.

Project	City/municipality	Costs (millions of pesos)		
		Works[a]	Land	Total project
Juan Luna	Manila	6.030	12.730	18.760
Leveriza Street	Manila	8.160	11.260	19.420
San Martin de Porres	Quezon	5.970	8.000	13.970
Capri	Quezon	11.390	—	11.390
Bagong Barrio	Caloocan	44.383	41.460	85.843
Maricaban	Pasay	25.765	1.056	26.821
Tramo Lines/F. Victor	Pasay	14.939	0.654	15.593
Barangay Tañong	Malabon	4.400	4.760	9.160
Barangay Tangos, et al.	Navotas	25.440	7.101	32.541
Hulo Estate	Mandaluyong	14.290	5.090	19.380
Coronado Estate	Pasig	2.240	1.420	3.660
Landless Barangka	Marikina	6.440	0.800	7.240
CAA Compound	Las Piñas	14.290	0.500	14.790
Sub-total (Works + land costs)		183.737	94.831	278.568
Building material loans				7.080
Reserve fund for land				34.522
Total cost for ZIP				320.170

[a]Includes design and supervision, physical contingency, and price contingency.

Table 2. Results of the Zonal Improvement Program.

Project	City/municipality	No. of families			
		1980	1981	1982	Total
Juan Luna	Manila	160	1323	—	1483
Leveriza Street	Manila	—	1450	1450	2900
San Martin de Porres	Quezon	—	—	1071	1071
Capri	Quezon	—	661	661	1322
Bagong Barrio	Caloocan	966	3304	3130	7400
Maricaban	Pasay	507	1238	1621	3366
Tramo/F. Victor	Pasay	—	1037	1037	2074
Tañong	Malabon	222	222	—	444
Tangos, et al.	Navotas	176	1690	1689	3555
Hulo Estate	Mandaluyong	523	1626	700	2849
Coronado Estate	Pasig	—	411	—	411
Landless Barangka	Marikina	—	398	398	796
CAA Compound	Las Piñas	302	839	188	1329
Total no. of families		2856	14 199	11 945	29 000

markets. Electricity is provided on demand.

Beneficiaries are offered a 25-year transferable lease with an option to purchase after 2 to 5 years of continuous occupancy. In cases where there is multiple occupancy and issuing a land title becomes difficult, suitable arrangements can be made by creating condominiums and cooperatives of occupant families to whom titles can be issued.

Loans averaging P600 to 3000 (US$80 to 400) per structure can be made to owner builders at an interest of 12% per year over a maximum period of 15 years. An average loan of P1000 (US$133) is expected to be extended to 40% of the total number of beneficiaries.

The elements to develop the livelihood component would be technical assistance; financing for buildings, equipment, and land and services; and manpower training. Under the concept, each family is considered a production unit and becomes the vehicle for increasing income within the settlement.

Cost recovery in ZIP will follow the principles established by LOIs 555 and 557 as amended by LOI 686. This will be effected through lease or sale of plots and from user charges. Lease payments and selling price of plots include the cost of land, on-site infrastructure, on-plot development, and, where applicable, a loan for building materials. Beneficiary charges are designed to cover all these costs amortized at 12% over 25 years. At an average of P68 (US$9.20) per month, this would be affordable to families earning P340 (US$45.95) a month. With this payment, families get the full complement of housing services.

Implementing a Slum-Improvement Program

Institutional Framework

The institutional framework for ZIP (Figure 1) is based on the following considerations relative to planning and implementation of a slum-improvement and resettlement program in Metro Manila. First, the magnitude of the slum problem requires the deliberate identification of projects and their priorities and the application of limited resources where the need

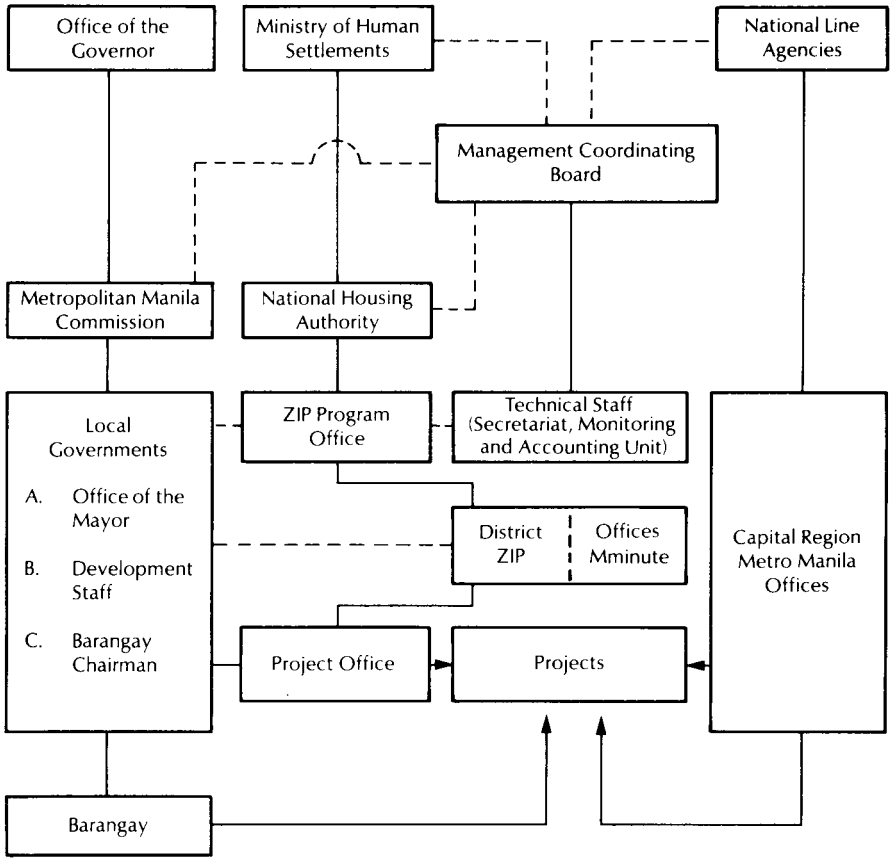


Fig. 1. Institutional linkages for the Zonal Improvement Program.

is greatest. Secondly, the multi-faceted approach to upgrading slums and blighted communities raises issues that should be resolved into policy and program guidelines for planning and implementation. Thirdly, the participation of national agencies and local governments demands close and continuing coordination and integration of efforts at the management level to ensure that commitments of participating agencies are undertaken according to agreed policies and programs. Fourthly, problems encountered in upgrading of slum communities require a lead agency in the implementation of physical infrastructure development and supportive socioeconomic development programs. Lastly, matching the objective of recovering government investments in the development of specific sites with what is affordable by the ultimate beneficiaries requires careful allocation of costs and a system for cost recovery.

The role of each participating agency (see Figure 1) may be summarized thus. The office of the Metro Manila Governor and the Ministry of Human Settlements (MHS) provide direct policy and program supervision over the Metro Manila Commission (MMC) and the National Housing Authority (NHA) respectively. A Management Coordinating Board (MCB), chaired by a representative from the MMC and with senior representatives from MHS, NHA, Ministry of Public Works (MPW), Technology Resource Center

(TRC), Ministry of the Budget (MOB), National Economic and Development Authority (NEDA), and, upon invitation, other participating national line agencies, is the body that resolves policy, budget, and program issues and integrates the program. It likewise approves the yearly, mid-range, and long-range program for ZIP and endorses the release of funds from the MOB to NHA to implement the projects. A technical secretariat provides staff support to the MCB on program and funding review and coordination, secretariat services, and undertakes program monitoring and accounting. The MMC provides direct supervision over the participation of the local governments in the program in terms of loans, collection from beneficiaries, and maintenance procedures. It also approves, in consultation with the NHA, the priorities of local government projects to be included under the program. The NHA as the implementing agency has overall responsibility for the implementation and execution of projects under the program and extends technical and funding support to local governments while involved in joint projects. The program office in NHA prepares the annual and multi-year programs and recommends the same to the Management Board.

The district offices, constituted from the NHA, MMC, and local government personnel, undertake the preparation of project feasibility studies and related planning activities and provide administrative and operational supervision over all projects within the district. Implementation teams fielded by the district offices undertake the execution and field supervision of specific work contracts for each project under the program. The district teams in cooperation with the local governments undertake community relations, social development, and livelihood programs. The local governments assume estate management and administrative functions including collection of payments from project beneficiaries under the overall guidance of the MMC.

Perceived Difficulties in Implementation

The ZIP has proven effective in carrying out an extensive slum-improvement program. Several positive features are immediately apparent. The resources of both national and local governments, through the so-called "inter-agency approach," have been brought to bear on the housing problem. Rationalized cost allocation, which charges to the national agencies components of development normally provided by government, has closed the gap between the cost of improvements and the level of affordability to the beneficiaries. The barangay, as the smallest administrative unit in the Philippines, is strengthened within the community. The local government, with the barangay as its channel, is given the opportunity to apply basic resources in stimulating community development where such resources are most needed. A clearly defined review and approval channel is prescribed and policy issues are resolved by the MCB. Project monitoring and evaluation undertaken independently by the technical staff of the MCB allow accurate reporting on the status of the program and an unbiased presentation of problems and issues and, hopefully, alternative solutions.

Nevertheless, perceived difficulties arising from the nature of the institutional structure or from the concepts of slum improvement, continue to

loom over the program. Several of these difficulties require critical attention.

Issue of Inter-Agency Coordination

The inter-agency approach to slum improvement is saddled by traditional bureaucratic constraints, jealousy, and problems of integration and coordination. The need to bring together the resources of both the national and local governments in pursuing a slum-improvement program is not only desirable but mandatory. Each agency has developed its respective expertise in the implementation of its primary responsibilities. It is presumed that no organization can undertake a work component in the slum-improvement project more efficiently than an agency whose existence is primarily for that purpose (e.g., the Ministry of Public Highways for national roads). By charging to these national agencies the cost of community facilities normally provided by the government, the total cost allowable to the beneficiary is reduced and higher standards of servics are made affordable by the beneficiaries.

But each national agency has its own primary interests and principal programs. The choice for them is not difficult when conflicts between their normal functions and the requirements of the slum-improvement program arise. Invariably, they resolve such conflicts in favour of their respective programs. Implementation schedules can be a problem. For example, the timing for the construction of water lines, drainage systems, and road networks has to be worked out very well otherwise roads may be laid out only to be ripped up to install water and sewer lines.

The NHA response to the above issue is what is termed the one-agency approach to implementation, in which the cost for specific project components (say schools) is charged to the national agency concerned (Ministry of Public Works), whereas funds are channeled to NHA which then undertakes the work. In this approach, however, heavy resistance is encountered from national agencies jealous of their respective functions.

Inherent Weaknesses of the Local Government

The local governments can become the strongest and, at the same time, the weakest link in the institutional setup that has evolved. If the local government is fully committed to the program, definite progress is achievable in the slums. However, the local government has inherent weaknesses, the most obvious of which is its severe lack of trained personnel and limited financial capacity. In local government, the city engineer is the only staff member with technical know-how. He is more involved in light municipal infrastructure, construction, and maintenance. Given the complexity of slum improvement, even the city engineer finds it hard to cope with the technical requirements in the problem of slum improvement. In some instances, the municipality may be willing to hire additional technical staff. Here the problem of recruiting qualified personnel for the immediate buildup of expertise at the lower level is inhibited by the established and comparatively low salary scale.

The limited revenue base of the municipality imposes heavier constraints. Works chargeable to the local government may not be within its funding capacity, and, thus, programs cannot be readily expanded.

As a consequence of these weaknesses, heavy inputs are required from

the lead agency (NHA), a situation acceptable only during the initial phase of the program. These weaknesses need to be overcome, otherwise the long-term objective of turning over the program to the local government cannot be achieved.

Lengthy Project Cycle

Under ZIP it normally takes a period of 3 years from inception to the completion of a project. There are compelling reasons for this length of time, and the channel for the approval of project sites is arduous. The solution of complex problems of planning with the community and implementing on-site improvements with the least dislocation and disruption of normal community activities is also time consuming.

Complications may arise as a result of the lengthy project cycle. If the area is not kept under control, new squatters may invade the project site. Community interests may wane, leading to all-around disenchantment over the program.

Increasing Project Cost

The longer it takes to complete the project, the higher its cost, and the higher the cost, the greater the danger that families will not be able to afford the level of development of the project. The more families there are unable to afford the monthly charges, the less financially feasible the whole program will be. This is the chain of events that may be triggered by higher costs. There is no way costs can be pegged at a certain level. However, the escalation of costs can be minimized through a concerted effort to keep the program moving within predetermined project plans and in accordance with projected schedules.

Danger of a Politicized Program

The temptation for local mayors to make too much political capital out of ZIP is great. Already they see the program as an opportunity to expand their mass base. In a sense, this is good for the program because the local executive will be more inclined to support and push its implementation. However, a project can be exploited to favour only the political supporters of the mayor. This could be particularly true in the award of home lots in the improved slum. Also, construction contracts could be awarded to contractors friendly with the mayor at higher costs. The trade-off between the need to commit fully the local government and the possibility of the project becoming a political plum of the local officials should be well considered by the policymakers of the program.

Conclusion and Recommendations

Developing the Capacity of Local Governments for Slum Improvement

The Philippine experience in slum improvement has provided valuable insights in the participation of local governments in a long-term slum-improvement program. Of interest in this paper are the indicative strengths and weaknesses of local governments which allow the national government to reinforce its effort at critical stages of the program. The

following broad statements can be made about local governments' participation in the slum-improvement program.

a. Because slum improvement addresses the needs of the urban poor and local government officials are inclined to support the program for the opportunity it offers in strengthening and expanding their political base. As an approach to housing needs within the urban core, slum improvement is relatively popular to the local government and the intended beneficiaries.

b. The local government is not organized for slum improvement. In some big cities, a city planning unit may exist that can be structured and directed toward planning and implementing a slum-improvement program. As a general rule, a city engineer's office is the centre of all municipal infrastructure works. Community development units may likewise be available. There is, however, a general lack of technical staff and heavy infusion from the national government is necessary to provide the local government with the technical capacity to pursue a sustained program of slum improvement.

c. There is a need to safeguard the concept of slum improvement from being eroded by the enthusiastic response of local governments. This is particularly true in municipalities with a relatively strong financial base. Local government officials tend to drift back to the traditional house-and-lot concept of housing by overcommitting in terms of the level of standards of development, which may no longer be affordable by the intended beneficiaries.

d. Therefore, at the early stages of the program, there is a need for intensive indoctrination of local governments, particularly those officials involved in the program, in the concepts of slum improvement. The objective here is to provide the participating local governments a uniform framework for their participation in the program. These local governments should be made to understand and accept the concepts of slum improvement.

e. Local government support for the community participation is a fundamental principle of the program. The extent, nature, and scope for community participation as these relate to the planning and implementation of the program are, to a large extent, vague. Given the insecurity within the community, particularly in the matter of land tenure; government's past practice of clearing squatter colonies; and the inherent communication gap between government and the community, specially on the matter of what is good for the urban poor, community participation cannot be reduced to hard-and-fast rules. It should, however, be kept in mind that for all its good intentions (especially the local government) the government is capable of being wrong in the planning and implementation of slum improvement. The community, despite the lack of detailed knowledge about the program, is the best judge of what its members' needs are and how they can be met.

f. The lack of qualified personnel at the municipal level inhibits the local government from participating in a meaningful manner in the livelihood component of a slum-improvement program. The objective is to develop opportunities for increased income, productivity, and employment. The ultimate objective is to develop a self-reliant community. Thus much emphasis is given to self-help projects. The livelihood component may,

and should preferably, precede the physical improvement components of the program. There are, however, pitfalls in the livelihood components that must be avoided by the government. There is a tendency among planners to match the level of improvements to be introduced in the community against the projected (or anticipated) increase in income as a result of the livelihood component. This tends to overestimate what the community can afford and the financial success of the project is jeopardized.

Because, theoretically, the livelihood component is supposed to build on existing business in the area, this is often translated into small-scale business loans. The assumption is that there exists in the area entrepreneurial talent that can be harnessed to expand small-scale businesses. This may not be the correct basis for a livelihood program for it can be argued that those with business talents may have succeeded in improving their financial situation and have long left the slum to live in better-situated communities.

g. The debt-servicing function of the local government under the program is of primary concern to local officials. It is argued that if families have lived in slum areas for many years without paying for community services, they may not be willing to pay for the improvements after the project is completed. It is, thus, imperative that a range of standards is prescribed at the start of project planning. If community participation has been undertaken correctly, the planner and the community can arrive at a mutually acceptable level of standard that will allow the recovery of investments.

h. Nevertheless, estate management including maintenance as a function of local governments, can be a source of problems and, unless recognized and planned early in the program, will inhibit a well-meaning government to replicate extensively slum-improvement projects. The community has traditionally extracted whatever community services it can from government for free. In all likelihood, the community may not be willing to pay monthly charges for services made available to them under the program. As a consequence, there can be a large percentage of default in the payment of such charges.

Policy Guidelines on Local Government Participation

Based on the foregoing discussions, it is now possible to develop some policy guidelines on the participation of the local governments in the program. Such guidelines may be spelled out by the national government as provisions of the basic law requiring local governments to participate in the program or as issuances of the umbrella organization supervising the program for the national government.

The policy guidelines should define the participation of the local government and other participating agencies, set forth fundamental concepts of the program, and prescribe norms for implementing critical aspects of the program. To this end the following observations are pertinent.

On the Inter-Agency Approach

1. Representation in the Management Coordinating Board for the Slum-Improvement Program should be limited to senior officers (preferably the

agency head) of participating agencies so that they can commit their respective agencies to a decision of the Board.

2. The local government executive (the Mayor in the Philippine context) should be required to attend deliberations of the Board on the projects within the city/municipal jurisdiction.

On the Functions of Local Government

The primary functions of the local government during the initial phase of the program may be defined as follows:

- Identifies and ranks in priorty the project sites;
- Contributes local staff to district offices;
- Undertakes corollary socioeconomic development program;
- Participates in bidding and awarding of contracts as a member of the prequalification, bidding, and award committees;
- Identifies the project beneficiaries and recommends allocation of home lots to them;
- Accepts completed projects and assumes the liabilities of the project;
- Undertakes estate management functions; and
- Collects lease and mortgage amortizations.

On the Organization of a Slum-Improvement Unit

1. The local government is required to organize the nucleus of a planning and implementing unit for the program. Initially consisting of personnel for community development to be detailed to district teams, this unit should be expanded gradually to a full-scale slum-improvement office.

2. The local government should designate a senior staff to be specifically responsible for the participation of the local government in the program. Such personnel should devote full time to the program.

On Community Participation

1. The local government should initiate the organization of a community council in each project to serve as the venue for consultative discussions with resident families.

2. The barangays — the government's smallest administrative unit at the community level — should be recognized and used as the channel of communication between the project offices and the community.

3. The community should be allowed to participate in the decision processes during the planning and implementation of the project.

On the Livelihood Component

The livelihood component to increase income, productivity, and employment opportunities should preferably be introduced at the front end of the program. It should emphasize community-based activities with long-term benefits.

On Safeguarding Fundamental Concepts

1. Affordability should be the measure of benefits from developments introduced and paid for by resident families.

2. A comprehensive social development program in health, nutrition, sanitation, education, and family planning should accompany the introduction of physical improvements.

3. Housing improvement should be undertaken on a self-help basis through the assistance of a housing materials loan program.
4. The land-tenure system should lead to individual or communal ownership of land by the beneficiaries.
5. The range of standards for slum improvement should not compromise environmental sanitation and hygiene.
6. There should be minimum displacement of families and maximum retention of structures. Whenever resettlement is deemed necessary to accommodate families to be dispersed by the introduction of facilities and services, an area near the project site should be developed as a sites and services component of the slum-improvement project.

Toward a Slum-Improvement Program of the Local Government

In the long run, the national government should assist the local government in undertaking the planning and implementation of a slum-improvement program. Definitely, technical and financial assistance will be needed from the national government. It is perhaps a desirable objective that, at some future time, the local government might replace the lead agency (NHA) of the national government in the planning and implementation of a program within its jurisdiction. The program therefore should progress with this objective in mind.

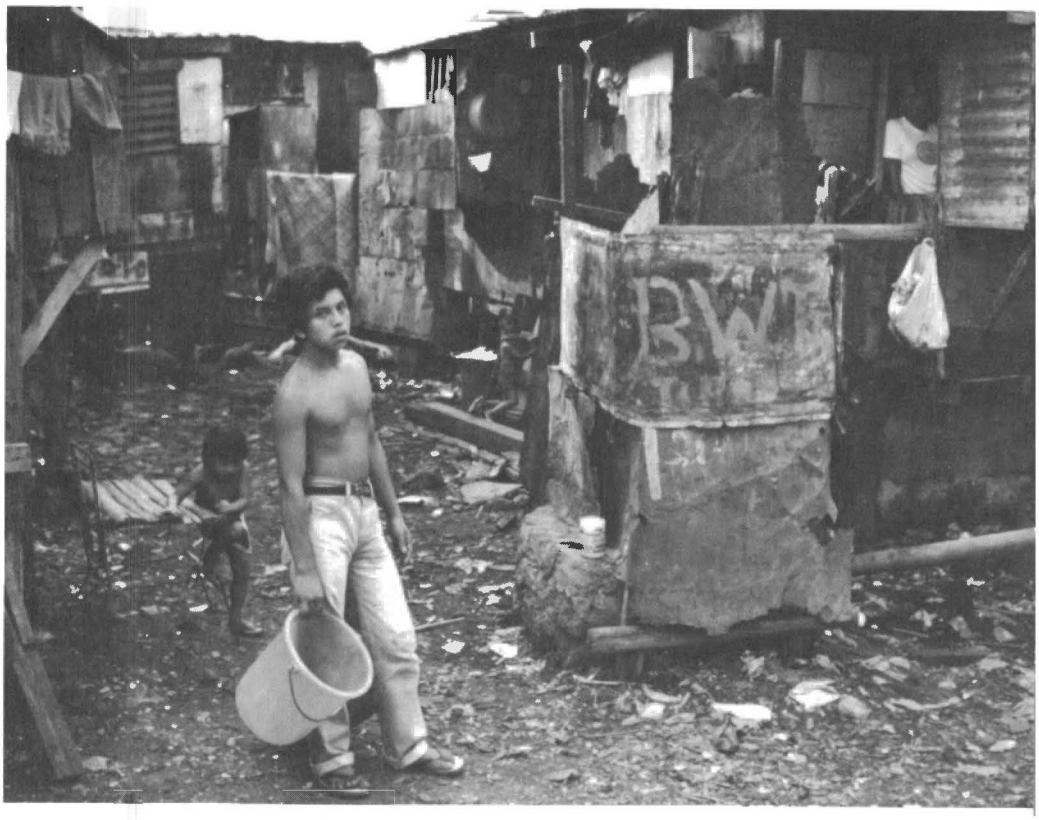
There should be a conscious effort to effect this transition. From the inception of the program there should be a gradual expansion of the responsibilities of local governments corresponding to its capacity to build up personnel, in five stages.

1. The local government designates a key person to be in charge of its participation in the program. It constitutes a community-development team to be detailed out to the district office for community-related activities.
2. The nucleus of an estate-management team is organized. Because the local government will assume the function of estate management upon completion of the project, this unit should be organized, trained, and deployed in the community even before the first project under the program is completed.
3. Junior engineers, architects, and urban planners, depending on the availability of such professionals at the local level are hired and detailed with the design and implementing teams of the national agency for training.
4. A project team is constituted from the above groups of individuals to handle a specific project under the supervision of senior technical staff from the national agency.
5. Additional project teams are constituted following the same pattern to expand the capacity of the local government to undertake several projects simultaneously.

As the financial base of most local governments is very limited, they should be provided with a source of funds to support the organizational requirements necessary for the eventual takeover of the program. The project should be able to carry this cost. Thus, all local government personnel engaged full time in the development of the project are charged to the project. Normally, this represents 6% of the total project cost, which is

allocated for design and supervision. In a similar manner, the local government must be provided with a source for funds to support its estate management and maintenance functions. If the financial framework of a project is correctly structured, the local government should be provided a spread between the interest rate being charged the beneficiaries and the cost of funds used for the project, which should be sufficient to cover the setup costs of the slum-improvement program.

It is difficult to say how soon from the start of the program the local government can take over slum improvement within its own jurisdiction. It is recognized that many factors can either speed up or undermine the process. In the former case, the first important step is taken when the local government accepts the principle that it bears the responsibility to respond to the most urgent needs of the urban poor. Once this is done, the local government has no option but to pursue slum improvement. The process of developing a slum-improvement program under the local government will then be under way.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Bagong Lipunan Sites and Services Program: The Philippine Experience in Rural Housing and Development

Arturo D. Aportadera

As in most Third World countries, development in the Philippines has been largely uneven. Development is concentrated in urban areas, attracting rural folk to the cities and causing congestion and a rise in urban slums. The rural areas, on the other hand, further stagnate and continue to lose people needed to till the fields. The Philippine Human Settlements Program is the government's response to the need for a rational, efficient, and effective use of the country's resources for the development of successful communities.

The national government, through the Ministry of Human Settlements (MHS), has focused attention on these and other related problems, and identified the following institutional goals that underscore its programs and projects:

a) optimum use of land as a national resource in the public interest rather than as a commodity subject to price speculation and indiscriminate use;
b) economic success of settlements through the use and development of existing resources and continuing provision of livelihood opportunities for the people;
c) delivery of appropriate technology that fits the needs of Philippine industry and other users of the technology;
d) existence of sufficient housing facilities including basic services necessary for human living; and
e) protection, conservation, and regeneration of all natural resources including all life-supporting elements in land, air, and water.

The Bagong Lipunan Sites and Services (BLISS) Program

To date, the most tangible manifestation of this human settlements program is the Bagong Lipunan Sites and Services Program (BLISS). This program applies the humanist concept of community building in both rural and urban settings.

The Rural BLISS Program is designed primarily to put up model communities of 50 families each in every municipality in the country. To demonstrate the human settlements approach, each Rural BLISS I site is provided with the minimum requirements for a healthy and better community life.

About 300 sites are programed for completion annually, giving the

Table 1. Summary report on Rural BLISS Program (September 1980).

Status of project	Number
Physical development	
For development	256
Ongoing	84
Completed	108
Total	448
Number of beneficiaries	
Projected	16060
Existing	9660
Housing/dwelling units	
Projected	16060
Existing	5400

Table 2. Regional distribution of BLISS projects.

Region	Target		Total
	1979	1980	
I	22	13	35
II	16	19	35
III	21	17	38
IV	27	14	41
V	14	24	38
VI	26	16	42
VII	12	12	24
VIII	10	10	20
IX	8	30	38
X	25	23	48
XI	11	16	27
XII	20	42	62
Total	212	236	448

program about 5 years to put up 1500 communities starting in 1979. As of late 1980, the program was well in place with a much larger number of beneficiaries and dwelling units projected in the future (Table 1). The regional distribution of BLISS projects is portrayed in Table 2.

To provide BLISS residents with more opportunities for economic advancement, the BLISS program has intensified the provision of livelihood projects on every BLISS site. As model communities, BLISS I sites are envisioned to have all the basic amenities of human life. Thus, arrangements were made whereby various support agencies provide basic social services to BLISS communities. These services include water, power, food, clothing, shelter, health services, education and technology, sports and recreation (Figure 1), ecological balance, and mobility.

Program Management

The Cabinet Coordinating Committee is the highest policymaking body for the BLISS program. It has the Minister of Human Settlements as Chairman, and as members the Ministers of Planning, Agriculture, Budget, Education and Culture, Industry, Labour and Employment, Local Governments and Community Development, National Defense, Natural Resources, Public Works, and Communications and Trade.

This committee is assisted by the Ministry of Human Settlements as

Fig. 1. A view of a playground and sports facility. NOTE: All photographs in this report were taken in the Bagong Aplaya Rural BLISS project in Davao City, Philippines.

Program Secretariat with the Human Settlements Deputy Minister as Secretary-General. Program management for the Rural BLISS Program is the responsibility of the Rural BLISS I Secretariat headed by the Program Manager.

Program Components

As a network of interlocking systems seeking to answer the total needs of the community, the BLISS I program has identified five project components that characterize every BLISS community.

Organizational Development

A major factor contributing to the success of the BLISS program is participation by people. As a development strategy, BLISS deliberately veers away from the concept of mendicancy or simple distribution of benefits. Instead, BLISS makes people not only receivers of help, but also partners in development. By organizing the beneficiaries into the Bagong Lipunan Community Association (BLCA), the collective efforts of the residents are harnessed to the full.

As an organization, the BLCA serves as a channel through which government services and efforts are delivered, and as a catalyst for the sociopolitical and economic growth of the community (Figure 2). To a certain extent, the success of these organizations as service channels and catalysts for growth is a measure of the community's level of self-reliance.

Fig. 2. Members of the Bagong Aplaya Bagong Lipunan Community Association coming ashore after a day's fishing.

Through the organization development specialists (who are assigned by implementing entities for a minimum of 6 months on a BLISS site), planned and guided social change processes and innovations are introduced, take root, gain acceptance, and become a part of the normal behaviour of the community. Organizational development starts by encouraging people to participate in community-level planning processes; later, it goes to the provision of training for skills and management development; and eventually it involves periodic review and assessment processes that enable the associations to make decisions on their own.

Site Development

The initial concern for a BLISS community is basically the creation of a physical environment conducive to living. This is primarily to give the occupants a healthier and more decent place in which to live and to provide them with more chances for social and economic growth. Thus, efforts are made to provide services and physical facilities such as roads and footpaths, drainage systems, water and power supplies, schools, barangay centres, and clinics. The design of durable and practical houses is based on the aesthetics and cultural preferences prevailing in the area (Figure 3). The BLCA plays a major role in the physical maintenance of these facilities and community buildings. This, in fact, serves as the initial exercise to test the strength of the community in that its success depends on how well people cooperate and help one another in getting things done for their community.

Service Delivery

As model communities, BLISS sites exemplify the efficient and effective

Fig. 3. A view of the shelter units. Concrete building at right is a prefabricated school building.

delivery of basic services by government agencies. Thus, BLISS beneficiaries are trained to negotiate with various government agencies for the delivery of basic social services to their communities. Annual forums for these negotiations are held at the local and regional levels and are known as Service Integration of Government Agencies (SIGA) conferences. An example of the kinds of services negotiated at such meetings is provided in Table 3.

Shelter Provision

BLISS I house design and construction provide the basic minimum space requirement for healthy and enjoyable living for an average Filipino family. Indigenous and durable construction materials and local architectural motifs are incorporated in the design to reflect Filipino traditions, culture, and beliefs.

Whereas the houses constructed initially in 1979 and 1980 were of urban-type bungalow style, emphasis this year will be placed on elevated houses of concrete or semi-concrete materials. The lower portion will serve initially as an area for generating livelihood, but can ultimately accommodate more living space upon the increase of family size and income.

Livelihood Development

The introduction of livelihood projects in BLISS sites is one major factor differentiating BLISS from past efforts by government in relocation and housing. Whereas past efforts effectively separated residents from their sources of income, BLISS I provides each beneficiary with a wealth of

Table 3. Services negotiated by Rural BLISS I projects during the 1980 SIGA regional conference.

Negotiated services	Region												Total
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Food	5	20	24	18	12	84	10	2	8	45	17	2	247
Water	2	3	3	3	6	10	6	1	1	13	5	2	55
Power[a]	—	—	2	—	—	—	—	—	—	—	—	—	2
Livelihood (including clothing)	3	30	19	21	8	23	24	16	5	30	7	—	186
Mobility	3	4	6	12	9	26	8	6	2	7	7	1	91
Medical services	2	21	8	6	4	80	17	6	5	13	1	2	165
Sports and recreation	—	—	4	2	—	8	7	4	9	2	9	—	45
Education	2	13	10	22	14	69	13	3	2	11	5	1	165
Ecological balance	—	4	2	12	2	11	8	5	2	—	3	1	50
Total	17	95	78	96	55	311	93	43	34	121	54	9	1006

[a]Power is assumed to be provided already by the implementing agency.

opportunities to earn more within the BLISS site itself through small-scale livelihood projects. Though these projects are intended initially for home consumption by the beneficiaries, it is estimated that they could ultimately provide each family with a minimum of P300 (US$40)/month in additional income, which is enough to meet their basic home requirements and also to pay for monthly amortization of their housing units.

Land Ownership and Usufruct Arrangement

As a national program, BLISS helps to reorient the attitudes of the people toward land: from the traditional concept of land as an individual property to one of using it as social resource. Thus, leasehold arrangements are adopted as the operating rule in BLISS. Through the usufruct arrangement for use of land, the government owns the land whereas the BLISS beneficiaries are entitled to its use and the gains derived therefrom. BLISS demonstrates that under this system, security of tenure, lower loan repayments, and income-generating projects are assured by the government; and a freehold title need not be preferable.

Beneficiary Selection

Residents of a BLISS community are selected through a process following a set of procedures and criteria prepared by the BLISS I Secretariat. Selection is done locally by a selection committee usually headed by the local mayor. Assisting the mayor is the vice-chairman who is a local representative of the MHS, usually, the Human Settlement Officer (HSO). Other members are: a parish priest, a local social worker, the highest education official in the municipality, the president of a local civic group, and a representative of the implementing entity, usually the project manager.

Selection criteria state that BLISS beneficiaries must:

- be a Filipino citizen
- be a resident of the municipality (where the BLISS site is located) for at least 3 consecutive years prior to filing of application
- have a gross family income not exceeding P500 (US$66.7)/month
- be a member of a nuclear family of at least four but not exceeding six members; extended families must not exceed eight members
- be of good moral character
- be head of the family, including single persons with dependents numbering not more than seven
- be 45 years old and below
- be willing to abide by the rules and regulations of MHS
- have no existing, inheritable, or transferable real property or pending application with any government housing project, and
- have no history of habitual default in loan repayment.

For every BLISS site, 30% of the beneficiaries must come from the government sector. They must possess skills related either to livelihood propagation or to organizational development because they will serve to induce development in the BLISS community. This group of beneficiaries must satisfy the same criteria except that their monthly income should not exceed P1000 (US$133)/month. Preference will be given to social groupings be they families, clans, or occupational groups.

Repayment

Repayment of the monthly amortization for the housing units commences upon completion of the one-year residence grace period. Although the amount varies from one site to another, the average monthly amortization is P150 (US$20)/month. The money, collected by a representative of the implementing entity, is deposited in a separate account for BLISS collections in a local bank, for which the implementing entity is accountable to the MHS.

Model Communities

As model communities, BLISS sites serve a variety of functions. Primarily, through the BLCA, BLISS is considered as a private entity functioning as a multipurpose cooperative, managing and operating the community and its facilities. Likewise, it acts as a mechanism integrating government and private community development efforts at the local level. It also serves as a demonstration and testing ground for human settlements strategies and policies. In effect, it can be considered a growth point for the surrounding areas. Basically, however, BLISS sites serve several functions.

Technology Outpost

A BLISS community uses and adopts simple technologies that can easily be learned at the barangay level. With such technologies, productivity in rural areas can be increased, the quality of life in the household and community can be improved, and social attitudes will begin to accept the technology induced.

Laboratory for Community Learning

BLISS sites accelerate the realization of self-managing and sustaining communities. By training the people in project development and management as well as the use of resource potentials, they provide a place for development of skills on project maintenance and capability in building requirements for the community, specifically for livelihood.

Demonstration Centre

Changes in the level of awareness of people living in surrounding areas occur to a point where the people's need for a practical knowledge is satisfied due to the BLISS site's visibility as an outpost of technology. Thus, the BLISS sites serve to diffuse valuable information and to enhance the lives of people in surrounding communities (Figure 4).

Production and Marketing Centre

The BLISS site also serves as a focal point in fostering the economic development of surrounding communities. With government inputs being channeled to BLISS, it becomes the most logical starting point for deter-

Fig. 4. BLISS beneficiaries building two deep-sea trawlers from a P685 145 (US$91 353) loan from the Ministry of Human Settlements.

mining the appropriate mix of enterprise that may spread to surrounding areas. Through forward and backward linkages acquired through multi-generation projects, the BLISS community creates a high level of inter-dependence with neighbouring areas.

Conclusions

From its humble beginning, the Rural BLISS I Program has paved the way for the delivery of shelter to the Filipinos. Up to 1980, the following may be observed:

1. Delivery of low-cost housing is based on the affordability of the recipient to pay for the amortization of the housing unit. A viable livelihood program must go hand-in-hand with housing to augment income and increase capability to pay. Rural BLISS is now receiving repayments from beneficiaries who previously were not able to do so. A national livelihood program, which began in 1982 as the Kilusang Kabuhayan at Kaunlaran (KKK), had its roots also in the BLISS experience.
2. The maintenance of a grass-roots organization to attain capability for self-management is vital. The Bagong Lipunan Community Association (BLCA) required consistent management guidance. The Ministry of Human Settlements (MHS) launched the estate management program to provide the necessary support for the management and organizational development requirements of the BLCA. Coordination with other government agencies in the delivery of the 11 basic services to the BLISS communities is also managed by the estate managers.
3. Recent experience showed that the use of indigenous materials such

as bamboo or grass, despite their relative abundance was found to be insufficient. In 1982, new building materials and designs were used in flexi-homes. These are two-storey prefabricated buildings that could be built in stages, according to the capability of the beneficiary to pay. These are made of durable materials and are inspired from old Filipino shelter designs.

4. The experience in BLISS, both rural and urban, has also evolved into a national shelter program financed by contributions from all Filipino employees. This is known as the PAG-IBIG fund.

Assessing Project Impacts

Douglas H. Keare

This paper summarizes the general findings of a 5-year pilot program of evaluation applied to large-scale housing projects designed to benefit the urban poor in less-developed countries.

The evaluation program, the first of its kind, embraced projects in El Salvador, the Philippines, Senegal, and Zambia in its initial phase. Later, projects in Colombia, Indonesia, Kenya, and India were included. Although the findings presented here are derived primarily from the four pilot program countries, examples are drawn mainly from Indonesia and the Philippines.

Building evaluation systems into urban-shelter project operations makes it possible to gauge the achievement of objectives in measurable terms and to meet problems with appropriate action. This process depends upon distinguishing between a project's inputs, outputs, effects, and impacts.

The meaning of these terms can be illustrated with examples from highway projects. *Inputs* are the factors of production: materials, labour, capital, and management. *Outputs* can be recorded in two ways: both as the *physical achievements* of projects (e.g., miles of road of given specifications), and also as their *performance standards* (e.g., designed operating speeds and costs). Thus, the efficiency of maintenance programs can be evaluated in this framework by measuring to what extent, and at what cost, performance standards are maintained over time.

The distinction between effects and impacts is less clear-cut, but still useful. *Effects* refer to the more-or-less direct and immediate results of a project's execution (e.g., actual changes in traffic volumes, speeds, and operating costs). *Impacts* refer to longer-term, less-direct results of a project's existence (e.g., further traffic generation through the stimulation of agricultural or industrial activities along a highway). The line between effects and impacts might be drawn on the basis of time alone, or it might be decided as a question of assessing the difficulty and cost of getting results that meet tests of external validity.

Having noted this distinction, the last two levels of phenomena will now be merged under the familiar word "impacts," to cover the full range of project results. However, note that the bulk of subjects dealt with falls into the category of relatively short-term effects, rather than longer-term impacts.

Whereas the four projects in the initial evaluation program had different emphases, all were devoted to providing or augmenting appropriately serviced housing, built to affordable levels, according to the concept of progressive development. Progressive development may be defined as a

method of housing construction or upgrading achieved through staged development in which infrastructure or a core house are built by a contractor, and the rest of the house completed by the household; flexibility in housing design, construction schedules, and materials used; and self-help components. The latter may be organized in the following ways:

(i) mutual help, in which families work together in groups, often with supervision by program management;

(ii) self-help construction, in which the household hires a contractor to build its shelter;

(iii) self-help construction, in which the houshold hires and supervises individual labourers; and

(iv) self-help construction, in which the household uses its own labour to build its house.

The progressive development model has been used in two different kinds of shelter program, each of which has its own internal variations. One form is the sites-and-services scheme, in which new houses are built on previously unoccupied land with either basic or more elaborate infrastructure, such as water supply and sewage removal. The second is the upgrading approach, which improves existing community environments through the installation of basic infrastructure and replacement of, or additions to, existing houses.

Specific objectives included increasing cities' housing stocks with units built of better quality materials, increasing living space per person in such housing, and improving provision to neighbourhoods of water supply, sewerage, electricity, roadways, and community facilities.

The evaluations have so far gauged six areas of project impact: (1) achievement of physical objectives; (2) accessibility and affordability to target populations; (3) improvements to housing; (4) access to services; (5) employment and income generation (socioeconomic benefits); and (6) broader impacts on urban areas and on national urban housing policy. Each of these categories of results is presented.

Achievement of Physical Objectives

The projects under study have largely attained their goals of increasing or bettering housing stocks and providing infrastructure and other basic services. In all but one, the desired levels of water supply and drainage have been provided, despite considerable delays. Failures of management and coordination within, and between, government agencies have caused further delays, and some shortfalls, in the construction of schools, health clinics, community centres, and markets.

In the Philippines project, begun later than the others in the first contingent, the National Housing Authority (NHA) has completed most of the infrastructure installation charged to it: water and sewer lines with individual hookups, roads and footpaths, drainage, schools, health centres, and clinics. However, the access of beneficiaries to these services has so far been limited by delays in the organization of their software elements.

The projects' provision of housing has been at least as successful. In the Philippines project, 97.5% of sampled households in upgrading areas have undertaken some kind of housing improvement, with 12.5% building

completely new structures. These findings span a relatively wide range of household incomes.[1] Although reblocking has reduced the average lot size in the Tondo project area from 65.2 to 53.9 m^2, the range of lot sizes has been made more equitable. Concurrently, the range of housing size shifted from a minimum of 13.7 m^2 and a maximum of 400 m^2, to between 32.9 and 88.4 m^2. Moreover, reblocking has increased available rental space: an average increment of 10.5 m^2 has been added to sublet space, and the number of families offering rented rooms has increased by 10% (NHA 1980). This finding illustrates the significance of timing in evaluation studies. In the early stages of reblocking, the number of renters dropped substantially, but that proved to be a very temporary phenomenon.

In Indonesia, the Kampung Improvement Program (KIP) in Jakarta has served over 3 million people, developing more than 750 ha from 1969 to 1979. In the process, 925 km of roads, 950 km of footpaths, and 410 km of drains were built.

Affordability and Accessibility to Target Populations

Evaluation studies have confirmed that plots in sites and services projects and sub-projects are affordable to families down to the 20th percentile of the income distribution. This figure is actually somewhat better than the results projected at the early design stages. Projects for upgrading have been found to reach even lower-income strata. Thus far, residential turnover among project families has been no greater (and often less) than among non-participant, "control group" families. Further, the monthly cost of project participation has on balance been less than, or equivalent to, families' willingness to pay for housing services, given their sources of income. These findings, together with the generally acceptable rates of occupancy and construction, support the conclusion that the projects are affordable to their target urban populations.

Measures of project accessibility show that, as well as being affordable, the projects have actually attracted large proportions of low-income dwellers, despite substantial involvement of middle-income groups as well. In Manila, for example, Tondo residents are on average poorer than the typical Manila household, but the spread of Tondo incomes clusters closer to Manila's median income than toward the poorer end of the city-wide income distribution (Table 1). Note that 73% of Tondo households belong to the lower 60% of Manila's families, classified according to income; and half of Tondo's population can be classified as belonging to the poorest strata of urban society, i.e., those falling below the 40th percentile. Still, the income heterogeneity of the Tondo population is what stands out most clearly in these data.

Turnover appears to have been relatively low within the Tondo area over the period (1978–1981) since the implementation of the project began.

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[1]Meanwhile, in El Salvador, some 7000 houses were completed under the first project, accounting for most of the low-cost housing built during the period, at a third the cost of the nearest alternative. In Zambia, half the population of Lusaka has been affected by the initial project, and the production of low-cost housing increased by 50%.

Table 1. Relative income position of Tondo residents.

Metro-Manila income quintile	Tondo households (%)
Bottom 20%	24.2
2nd	25.8
3rd	22.8
4th	17.7
Top 20%	9.5

Source: NCSO (1979).

Among the original owners, 87% still own housing within Tondo; 10% have left the area. The corresponding figures for the control areas are 69 and 13% respectively.

The findings describing renters are more complex. There are no discernible differences between the rates at which renters left Tondo and the control areas. However, within Tondo, much higher percentages of renters have left their initial premises, which may be explained in part by the fact that many former renters have become owners in Tondo. Certain provisions in the Code of Policies increased the likelihood that families who were originally renters in the Tondo project area would purchase their own structures. About 12% of the households recorded as renters in the 1974 census have already benefited from the transfer of rights by legitimate project beneficiaries, and from the Code's provisions disqualifying absentee landlords and prohibiting ownership of more than one plot. Also, some 164 renters are now prospective owners of the condominium units built by the National Housing Authority (NHA) in one section of the site. These households occupy the units at present, and contracts for their purchase are in preparation, bringing to nearly 14% the proportion of renters who have so far gained direct access to project benefits as owners.

In Indonesia, figures on the early experience are just now being compiled and analyzed. However, it is quite clear already that the KIP program in Jakarta started, as intended, by improving the poorest kampungs. Turnover, at about 4% annually, has not differed significantly between improved kampungs, but is less than the 6% for non-KIP areas.

Though the foregoing observations confirm that the projects have been generally successful in reaching their target groups, considerable improvement still appears possible. To this end a study was undertaken of the income profiles of communities in the informal housing sector. Using data collected in the Philippines, El Salvador, and Zambia, it was possible to determine the relative positions of project beneficiaries in their respective urban-income distributions. The major finding is that, in both sites-and-services and upgrading projects, the target populations span a wide income range and thus tend, as in Manila, to be somewhat more representative of the middle class than of the poorest urban households.

From the available information for the three countries studied, data on the incomes of project households have been matched with national statistics on urban-income distribution (Table 2). The project income profiles are meant to reflect the situation prevailing before implementation of the project. This attempt at an ex-ante portrayal thus omits any income-augmenting effect that the projects themselves may have had. The table presents the percentages of beneficiary households which fall within specific quintiles of national urban-income distributions. Specific magnitudes

Table 2. Urban shelter programs: Whom are they serving?

National urban-income percentile	Sites and services (%)				Upgrading (%)	
	El Salvador		Zambia		Philip-	
	Sonsonate (1977)	Santa Ana (1976)	Lilanda (1980)	Matero (1978)	pines (1979)	Zambia (1976)
(a) 0-20th	6	11	28	18	24	38
(b) 21st-40th	38	32	26	38	26	22
(c) Upper 60th	56	57	46	44	50	40
(d) 41st-60th	37	38	16	14	23	17
(e) >60th	19	19	30	30	27	23
Total	100	100	100	100	100	100

Source: World Bank, Urban and Regional Economics Division.

must be treated cautiously, as both measurement errors and methodological constraints limit the accuracy of any given figure.

Line (c) of the table shows the percentage of beneficiary households lying above an arbitrarily selected "poverty line" drawn at the 40th percentile. The six projects represented tend to have close to half their households belonging to the upper 60%.

There are three striking aspects of these findings: the similarity in income profiles between upgrading and sites-and-services projects; the extent to which the projects reach the bottom 20% of the income distribution; and the substantial proportion of beneficiaries in the top 40% of the distribution. Line (a) indicates that, relative to sites and services, upgrading projects reach a larger percentage of the poorest urban residents. This outcome was anticipated by project designers, but the extent of the differences may have fallen short of expectations. At the opposite end of the income spectrum, according to line (e), all projects tend to benefit a sizeable number of families — 20 to 30% — with incomes above the 60th percentile.

For sites-and-services projects, this leakage of some project benefits to a less needy group suggests that more attention might be paid to upper-bound affordability criteria. For sites-and-services projects it is also useful to compare lines (b) and (c) of Table 2. If intra-project distributional objectives are important, then an effort should be made to increase the proportion of beneficiaries falling into the bottom half of the stated affordability interval.

In the case of upgrading projects, the presence of a large upper-income group illustrates the income heterogeneity of squatter-community residents. Note too that a squatter community like Tondo also exhibits a wide variation in the quality of housing. These findings suggest that informal housing is not synonymous with low-income housing, rather, that such areas are characterized by low rents, and some residents prefer them for this reason, regardless of their incomes. Also, inadequate shelter may not be due solely to constraints imposed by absolute poverty. The leakage of project benefits in upgrading programs must generally be accepted as an inevitable consequence of in situ development activity.

The empirical results are intended to reveal the distributional aspects of project benefits. The findings are analogous to what has been learned about employment in the informal sector, namely, the failure to belong to the formal sector is not a reliable indicator of poverty level. The results further recommend a distinction between housing objectives and poverty

objectives in any effort to justify particular interventions into housing markets.

If poverty alleviation is the primary goal, it may be that the types of shelter programs that have been experimented with are not the most cost-effective mechanisms by which to achieve it. It may also be found that alternative basic needs interventions (nutrition programs, health centres, etc.) are no more effective in reaching the urban poor, i.e., that they suffer from similar leakages to non-target groups.

If improving the circumstances in the housing market is the primary goal, then existing interventions can be justified, even if less emphasis is placed on their distributional outcomes. Housing and poverty objectives may not be easily achieved by the same intervention strategies, so these goals must be addressed individually at the design stage.

The findings summarized in Table 2 show that the feasibility of different housing schemes depends upon the definition of objectives. At times, professional opinion has drifted toward the conclusion that the upgrading of squatter areas was the clearly superior approach to addressing the housing needs of the urban poor. During one period, World Bank operational management asked evaluators to address the question whether the Bank should not concentrate more heavily on this approach. Available information now suggests that the answer depends upon chosen objectives: if the goal is to achieve maximum penetration into the lower-income deciles, then area upgrading is the superior approach, even though it permits substantial leakage. If the goal is to concentrate benefits within a narrowing range of low (but not the lowest) incomes, then sites-and-services projects may be more appropriate.

Improvements to Housing

At the early stages, local administrators in the host countries expressed fears that progressive development projects would result ultimately in the generation of new slums. So it is particularly significant that project beneficiaries have actually produced a quality of housing higher than expected. Families continue to invest money and time in project areas, progressively improving not only their houses, but also community facilities, such as sidewalks, parks, and community centres.

Estimations of housing quality and value have been undertaken mainly in the Philippines and El Salvador. In both countries, the evaluations have attempted to employ measures that incorporate assessments by the families of dwelling quality using non-subjective means, such as direct observations of building materials, estimation of housing's monetary value, and the value assessments of professional appraisers.

In the Philippines, various techniques have been used to estimate housing value, and hedonic pricing techniques have been used to determine which characteristics of squatter dwellings contribute most to housing value, and to obtain price-consistent measures of change in housing quality. The estimations have demonstrated that squatter dwellings are houses of considerable value (Table 3), the average appraised value being about twice the residents' average annual income, which is a ratio similar to that for formal market housing in most countries.

Table 3. Comparison of independently appraised housing values with owner estimates.[a]

		Philippines (1979)	Kain and Quigley (1972) St. Louis study (all owner-occupied homes)
(1) Average appraised values	$(1/N) \sum_{i=1}^{N} C_i$	US$1879[b]	US$14431
(2) Average owner-estimated values	$(1/N) \sum_{i=1}^{N} O_i$	1886	14473
(3) Difference [(1) − (2)]		−7	−42
(4) % difference [(3) ÷ (1)]		−0.4	−0.3
(5) Absolute value of differences	$(1/N) \sum_{i=1}^{N} (C_i - O_i)$	1027	3058
(6) Pearson correlation coefficient		0.765	0.87
(7) Spearman correlation coefficient		0.776	—
(8) Sample size (N)		96	113

[a] C_i = CONSVAL$_i$ = value of the i^{th} home as estimated by consulting professional appraiser.
O_i = OWNRVAL$_i$ = value of the i^{th} home as estimated by the owner of the i^{th} home.
[b] In US dollars at US$1 = P7.5.
Source: Jimenez (1982).

Hedonic techniques presume that a reasonable, well-fitting relationship exists between the prices of housing features (or those of any good) and the characteristics of those features. The equations used are not reproduced here. The data used to estimate them in the case of the Philippines were drawn from two sources: firstly, estimation by 96 household heads of the worth of their structures and the value of individual housing characteristics (floors, walls, etc.); and secondly, valuation of the structures by a trained independent appraiser contracted by the NHA.[2] Results with respect to housing value (see Table 3) indicate that the owners' assessments of their houses' worth (average P14 145 or US$1886) are not significantly different from those of the appraiser (average P14 092 or US$1879). Also the two estimates are highly correlated with one another and yield similar results when used as dependent variables in hedonic price equations. The determinants of squatter dwelling value tend, on balance, to be similar to those for formal sector dwellings.

A house's external appearance, and the type and quality of materials used in its construction are among the most important variables, especially the use of concrete for walls and some sort of finish, such as paint, for the walls. Lot size is another important measure of value. There is also preliminary evidence that the age of a structure is positively correlated with value. Age apparently proves a house's durability. It is a visible token of the accumulated resources invested through progressive development, as well as a sign that longevity in a particular area may be associated with reduced risk of eventual displacement. For example, the average structure in Tondo is nearly 12 years old, a measure of the Foreshore's ability to

[2] A more detailed discussion of the equations and the hypotheses concerning the inclusion of these measures of value, and the results of the estimation may be found in Jimenez (1982).

survive numerous threats of eviction and razing. Somewhat surprisingly, it appears that water and sanitary facilities are not valued as much in the Tondo project as in the market. This finding may be valid at the present stage of the stable neighbourhood's development, but it may indicate also that residents are not yet familiar with the sanitary advantage of toilets. Projects that include such services could also incorporate educational components to acquaint residents with the health benefits of sanitary facilities and their contribution to housing value.

Examined over time, most measures indicate an improvement in housing quality (Table 4). The positive changes are especially evident in the greater proportion of houses with solid walls and concrete foundations. Lot and building areas are also somewhat larger on average, as is the average number of floors. The proportion of structures with water connections declined slightly, probably due to delays in the provision of this service. The hedonic equations reveal that a composite indication of housing quality in Tondo has increased from 60 to 85%. In monetary terms, the absolute increase in housing value is estimated at between P6200 and 8000 (about US$827 to 1067).

Not all households have recorded increases in housing quality after reblocking. This finding should not be startling, given the relatively short time between reblocking and the second series of observations. In fact, some 34 to 37% of families had so far been unable to upgrade their houses to pre-reblocking levels. Considering the overall magnitude of improvement, then, the 63 to 66% of households that undertook investments apparently did so on a very large scale. It is not yet clear how socioeconomic characteristics intersect with these results. This question is a topic of

Table 4. Housing characteristics in the Tondo area.

Variable	Description	Mean before reblocking for affected sample	Mean after reblocking for affected sample
AGE	Age of the structure in years	8.58	10.2
		(4.25)	(4.45)
CMNTWALL	Proportion of dwellings with solid (cement or brick) walls	0.16	0.47
		(0.37)	(0.51)
FINWALL	Proportion of dwellings with wall finish (e.g., paint)	0.03	0.05
		(0.28)	(0.16)
SOLIDF	Proportion of dwellings with concrete foundations	0.08	0.26
		(0.27)	(0.45)
LOT	Average lot size in m^2	61.3	72.2
		(64.5)	(146.3)
BUILD	Average building area in m^2	32.1	53.4
		(16.3)	(15.3)
STOREY	Number of floors	1.4	1.6
		(0.50)	(0.50)
TOILET	Proportion of dwellings with bucket-flushed or other water-sealed toilet	0.29	0.50
		(0.46)	(0.51)
WATER	Proportion of dwellings with sink (and water connection) installed	0.92	0.84
		(0.27)	(0.37)
RICH	Proportion of dwellings in neighbourhoods (superblocks) with monthly average incomes above 1000 pesos	0.26	0.26
		(0.45)	(0.45)
Number of observations		38	38

[a]Standard deviation in parentheses.

current research. However, it is evident that improvements are still in progress and that squatter housing markets behave as economically rational entities, valuing dwelling units in much the way conventional markets do.

The evaluations have also yielded evidence that housing is, and ought to be, considered an investment as well as a consumption good. The shelter programs were originally conceived as means of increasing the consumption of housing. Housing was seen simply as a basic need in short supply, not as a potential investment for project beneficiaries. For this reason, restrictions were applied affecting the use and disposal of the properties. The Tondo upgrading project, for example, prohibits resale of developed plots for 5 years to minimize "encroachment" by higher-income groups and absentee landlords and developers. In other projects, the renting of rooms was also prescribed to ensure adequate levels of design density and to help prevent the deterioration of health standards. Such restrictions on ownership rights have undoubtedly depressed the demand for investment, the extent of that effect depending on how strictly the constraints have been observed. Present information on these questions is scanty, and they are the subject of current research.

The evaluation of other recent World Bank projects has shown that housing is indeed a profitable investment, constituting a major outlet for private household savings, generating employment at low foreign-exchange cost, and yielding a flow of income. A number of these studies reveal the market differences in propensity to incur housing expenditures between owners and renters. Although the effort to quantify the sources of these differences is only now under way, it seems that they are accounted for in part by the construction of additional space or rooms for rent.

The evaluations have found that renting is one of the most effective ways for project beneficiaries to increase their incomes, and is thus a means of keeping projects affordable, particularly for participants in the lowest-income strata. This and other means of income-generation through housing (i.e., industrial or commercial use of part of the structure) are almost certainly related to the ability to induce income transfers from the extended family to finance the initial construction. This hypothesis too is a topic of current research.

It should not be thought, however, that renters are destined to supply an ever-increasing proportion of owners' housing costs. There is no evidence to date that the projects are helping to create or enrich a rentier class, or that rents have been rising. In fact, preliminary evidence from the Philippines suggests that, although nominal rents have increased by 11% since project initiation, this actually represents a decrease in real terms, given the rate of inflation.

Access to Services

The projects have so far yielded mixed results in providing access to various basic services, although on the whole both sites and services and upgrading projects have made significant improvements in this dimension. Upgrading efforts have been so successful in Indonesia and the Philippines that they are being replicated on a national scale in both countries.

The example of El Salvador is the most instructive and best researched so far. There the relative scarcity, and consequent high price, of land compelled the executing agency to locate projects in the urban periphery. The result has been a trade-off between improved sanitation and access to children's playgrounds (produced by the projects), and the distance residents must travel to and from places of work, particularly for self-employed small traders. It is already foreseeable, however, that the dynamism of the communities will eventually diminish initial difficulties of access to transport and places of employment. Meanwhile, participation in the project results in an unambiguous improvement in access to water service.

Experience to date in other projects adds two important findings. The first is that the provision of all-weather road access is a highly significant feature in a project. In Zambia, for example, the installation of roads has meant that small businesses in project areas are better supplied. Demand for transportation has, meanwhile, exceeded public supply, prompting private sector employers to provide transportation for their employees. In the Philippines, roadways within project areas have been greatly upgraded. As a result, traffic has increased considerably, even at this early date, and prospects for further development seem good. It is, thus, not surprising that in Indonesia's KIP program much of the project funds is allocated to internal roads and footpaths.

The second finding is that delays in providing access to certain facilities can have adverse effects on access to other services, and that these impending effects can be complex and cumulative. In a country's initial experience with a shelter project, the large number of government and private organizations involved in providing basic services can present severe problems in coordination for implementation and financing. Consequent delays can raise the costs to participating households and threaten the objective of affordability. The lesson of these observations is that first projects in a given country should generally be small and relatively simple, enabling the executing agencies to build their capacities to provide the necessary services.

In the Tondo Foreshore project, delays by the agency charged with supplying water resulted in participants making only slight improvements to toilet facilities. Elsewhere, delays in provision of services have resulted in a slowing of site occupation and business development, and to problems of cost recovery.

Employment and Income Generation

The stimulation of employment and income generation is often cited as an ancillary justification for intervention projects in the low-income urban sector. Such projects have promoted this objective in three ways: firstly, through the use of hired labour during construction; secondly, through specific employment and business components; and thirdly, through induced effects. The working hypotheses were that the opportunity to own a better, more-secure home will stimulate families to offer more labour, and that improvements affecting the project area will bring families' labour and employment demands closer together.

The evaluations have found that, to date, the first method has produced much better results than the second. Exploration of the third has only just begun. Preliminary data from the Philippines show that the ratio of the number of paid to unpaid person-days of labour is approximately 2 to 1, with some 30% of households relying exclusively on hired labour, and another 49% supplementing their own unpaid labour with some hired labour. And the amounts of labour and labour earnings involved in the construction process in El Salvador and Zambia has been very substantive.

Regarding specific employment components, the record to date is not particularly impressive. A few initiatives have stimulated active demand. More often, however, these components have had modest positive impacts at best. In the Philippines, five different efforts at generating employment have been introduced. An initial program provided some 500 residents with jobs in the project's construction firms. However, because the program was not monitored, little is known about the kind of work performed or its duration. A second component, comprising loans to small businesses, was not well publicized, and the associated application procedures appear to have been daunting. Still, over 230 loans have been extended, largely for manufacturing and trading activities, and a slowly expanding stream of applicants (and workers) is flowing into the program. However, problems of cost recovery with the loan program have been significant. A third, vocational skills program, although well-executed, has not led to large-scale job placement. A fourth, cottage-industries program, including a shellcraft project and the conversion of garment scraps into toy and pillow stuffings, has proved unworkable, though popular interest in new ventures remains high. Finally, the larger commercial and industrial estates have failed so far to provide jobs in the numbers expected and tenants have not yet begun to make rental payments on their buildings when due. The NHA, which has overseen this component, may yet seek technical assistance to help the estates operate more efficiently.

One of the design assumptions of World Bank supported projects has been that they would induce employment and income generation by the very nature of the implementation process and its effects upon the community. This view was not entirely consistent with the extent of unemployment implied in the assumption in the earliest projects that the opportunity cost of families' own labour was zero or near zero. This was a weak hypothesis in some of the early project appraisal reports. The rationale for this premise was not clearly defined at the pre-appraisal stage, but it may be summarized as follows. The opportunity to own an asset that can be improved progressively, that is itself a potential source of earnings, and the value of which grows accordingly, will stimulate investment. The desire to invest in housing improvements will lead households to intensify their income-getting activities, perhaps with a lag when borrowing is feasible. For some households this will mean increased participation in the labour force, which will be facilitated by the improved quality of the neighbourhood and its access to services. Whether this might result in a net gain for the economy, or merely displace other workers, was not considered at the design stage.

The evaluations have thus far provided limited evidence to support the view just outlined. The high proportion of households using hired labour in construction — roughly two-thirds in the Philippines — suggests the

willingness and capacity of numerous families to expand their earnings in the labour market. Studies of income, expenditure, and affordability have shown that the housing expenditure-to-income coefficients are greater for unearned income than for wage earnings, and greater for the earnings of secondary workers than for those of household heads. Finally, studies in El Salvador suggest that participation in the labour force and earnings among secondary workers improve for participant families, relative to controls. Further estimation and additional years' data will be needed to determine whether these project-induced increases in employment and income are real and sustainable.

Contrary to some observers' expectations, expenditures for food, medicine, and other basic necessities do not seem to have been diverted by the greater attention of project participants to housing issues. Where it has been measured, a greater increase in per-capita expenditure on housing was registered by participants than by the control groups. However, there were no observable differences between the two groups' expenditures on food, medicine, and transport. In Zambia, sufficient plot size has permitted families to satisfy basic needs directly by growing their own food. There may well be scope for stimulating such activities in other countries.

Broader Impacts on Urban Areas and on National Urban Housing Policy

The initial success of upgrading and sites-and-services programs has made possible the introduction of similar programs on a national scale in Indonesia and the Philippines. This step has been an important advance, especially in the Philippines where, for the past two decades, the number of squatter families in cities and towns had increased far faster than the government's capacity to deal with the pressure of population. With no practical alternative at hand, a number of experimental, short-term measures were applied, ranging from short-lived efforts to return families to their original provinces, to equally unsuccessful draconian methods of forced relocation.

The Tondo project confirmed the success of the upgrading approach to meeting the demand for urban shelter. In 1977, upgrading was formally adopted as a national housing policy, when Letters of Instruction 555 and 556 and Executive Order 66-67 of the Metro Manila Commission detailed the respective frameworks for the Slum Improvement and Resettlement Programs (SIR) for the regional cities, and the Zonal Improvement Program (ZIP) for Metro Manila. The latter program, launched in 1980, proposed to upgrade some 415 sites over a 15-year period in Metro Manila, in which some 160 000 families reside.

A second result of project activities has been the general recognition that projects make heavy demands on the capacity of host cities to provide services to upgraded or newly developed areas. These demands range from the lengthy process of legitimizing land purchases to the provision, operation, and maintenance of water-supply, lighting, sewerage, and garbage-removal services. Although the difficulty of meeting such demands implies limits to the scale and complexity of urban shelter development, it also implies the possibility of expanding those limits through more-

dynamic and far-seeing planning and operation policies. The World Bank has already begun to design interventions that integrate housing programs with improvements in urban utilities and fiscal policies. Use of a framework of public finance, incorporating more-equitable systems of charges for housing and urban services across income strata, has been proposed to enhance the potential for projects to pay for themselves and to generate additional revenues to cover maintenance and further improvements.

A third consideration is the influence projects have on the nature and direction of urban growth. Preliminary findings in Zambia show increased social integration of richer and poorer neighbourhoods, with cooperation among residents in the achievement of shared goals. The general sentiment among project officers is that the projects have increased political awareness in Zambia without inflaming political tensions — no small achievement, given the highly-charged atmosphere of the squatter communities at the outset of the program. This positive outcome is due in part to the emphasis on community participation in various phases of project activity.

Comparable social results have been observed in the Philippines project. The Tondo area has clearly benefited from the legitimization of its land claims. The disruptions implicit in the reblocking process have not led to increased social instability. The barangay seems to have been strengthened as a sociopolitical unit responsive to development efforts, cooperation among families in the project has been evident, and informal surveys of police activity indicate that crime has dropped. However, initial impressions find social stratification in the Tondo area is visibly intensified, with differentiation made apparent by conspicuous consumption and investment in housing properties. Although this consequence may not be economically negative, the social repercussions of the differences in wealth may foreshadow future exclusion of less-affluent families. Continued investigation of this category has already been proposed.

Summary and Conclusions

The record, in the projects observed, is that they have been quite successful in meeting their physical objectives, both for infrastructure and housing. Though the beneficiary populations have typically spanned a wide range of incomes, the targeted poor have been well represented and have apparently found the projects desirable and affordable. The housing constructed has been of acceptable quality, typically greater than expected, and improvements are still going on.

In a world where public officials typically suffer from an "edifice complex," and are reluctant to have their names associated with projects that do not achieve dream standards, the most salient point on which to focus is that these informal, low-income housing markets behave as economically rational entities, valuing dwellings and their attributes much like conventional markets in developed countries. Moreover, the appraised values of houses bear the same relationship to owners' incomes as in the formal markets of most countries. Thus, the housing produced is as good as can be expected.

Therefore, it appears that these types of projects and their impacts on housing policies can be extended further and more quickly the more this market connection is stressed. That is, the stress should be placed on improving the operation of existing markets, not only to improve housing but also, eventually, to improve the revenue in the public sector generated by the improved properties and neighbourhoods.

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Kampung-Improvement Program: An Indonesian Experience

Suyono

Like many other developing countries, Indonesia has been suffering from the worsening condition of housing. Since the Second World War very little investment has been made in housing, although the need for housing has been increasing more rapidly than concomitant investment. As a result, kampungs and squatter areas have been growing in many cities, especially in big and metropolitan cities. Most of the people live in areas of poor housing. They lack easy access, reasonable sanitation, and other facilities. The conditions in the kampungs have worsened because population has increased continuously due to natural growth and migration into the cities.

Preparatory work toward improvement of such housing conditions has been going on for a long time. However, with housing investment losing to many more pressing problems, such as food, clothing, and economic infrastructures, meaningful improvement of housing conditions did not take place until the Second Five-Year Development Plan (1975–1979). Even at that time the available budget was still limited, such that the existing kampungs were improved, leaving some funds for the construction of new housing projects.

This paper presents highlights of Indonesian experiences in implementing the Kampung-Improvement Program (KIP). It discusses current housing policies, the historical background and rationale of KIP, past achievement, future programs, improvement standards, kampung-selection criteria and priority ordering, KIP organization, and popular participation in KIP. It is hoped that the Indonesian experience may be applicable to some countries in the region.

Indonesian Housing Programs

The Indonesian government has now three different housing programs for urban areas. The first is the Kampung-Improvement Program (KIP), designed to improve existing kampungs that have grown unplanned and that have poor infrastructures and urban facilities. For now this program does not include improvement of the houses, and it is expected that the houses will be improved by the owner on the basis of past experience. Though existing kampung and squatter areas are occupied not only by poor people but also by middle-income people, the target of this program is primarily the low-income population.

The second program is to provide new houses for low- and middle-income groups. The size of the houses varies from 15-m^2 core houses on 200-m^2 lots. For this group of people, the government provides long-term loans at subsidized interest rates through the National Saving Bank and develops such housing projects through the National Urban Development Corporation (PERUMNAS) established in 1974. Therefore, people can now borrow from the National Saving Bank to buy houses built by the National Urban Development Corporation (NUDC) as well as by private developers. The provision of long-term low-interest loans to housing buyers, combined with the provision of construction loans by other government banks to developers, will induce private developers to expand their activities in providing housing for low- and middle-income people, because they have a larger and more secure market now.

For the lower high-income population, the government provides long-term loans at prevailing market interest rates for buying new houses from private developers. This measure is expected to reduce pressure created by that group on the housing market for the middle-income population and will induce private developers to increase their production of houses for this group.

Supporting programs can be subdivided into three programs, the institutional program, manpower-development program, and other programs. For the institutional program, the central government has established or strengthened several institutions. In 1974, a National Housing Policy Board was established, followed by establishment of the NUDC in the same year, and additional assignment was given to the existing National Saving Bank to extend housing-ownership loans, comparable to mortgage loans, to low- and middle-income groups. The latter two institutions are still experiencing organizational development as their work load increases continuously.

For the implementation of KIP, special KIP units have been established in project cities, whereas for rural housing-improvement programs existing institutions dealing with improvement of the welfare of the rural population have been used.

Recruitment of personnel is continuous to strengthen and to expand the implementation agencies at the central, as well as at the local, levels, and is followed by courses and training programs to introduce them to, and to increase their capability to implement, the programs.

Introductory courses are also given to decision-makers in local governments to introduce the program to them and to make them realize that housing programs are actually their responsibility. The central government attempts to put this program on a self-sustaining basis as soon as possible by assisting the local governments in building up their capability, technically as well as financially, to implement and to continue the programs. The existing development programs financed by the central government are more directed at training and should be regarded as the beginning of development programs to be continued by local governments.

Historical Background

Kampung improvement in Indonesia is not a new phenomenon. It was started in the early 1930s by the Dutch colonial government. The program

was directed towards urban settlements inhabited by non-European people, especially the native population, that grew without proper planning and with very little basic facilities provided by the government. For example, kampungs had few paved roads, footpaths, or drains, no proper sewerage system, and no piped water supply, so they were not easily accessible and suffered from poor sanitation.

With the onset of the Second World War, the program was abandoned. The government did not refocus its attention on the problem until the late 1960s, when the first Indonesian Five-Year Development Plan (1970–1974) was formulated. Of course, in the interim some self-help activities resulted in limited improvement of living conditions, but because of their limited capability, technically as well as financially, the improvements made did not reach satisfactory standards. The improvement to the sanitation was marginal.

At the same time, similar kampungs continued to grow because of the increasing influx of rural–urban migrants caused by several reasons. In the 1950s, people moved into cities to escape from rural unrest resulting from rebellions in many parts of the country. That kind of migration continued until the late 1950s.

After the rebellions had ended, migrants continued to stay in the cities. Only some of them went back to their previous villages. Since then, migrants have consisted primarily of young people seeking higher education and better jobs. Old kampungs, thus, became more crowded and new kampungs appeared on empty and uncontrolled land, either privately or government owned, and located close to work places in the city.

During the First Five-Year Development Plan some local governments, such as those in Jakarta and Surabaya, started some improvement activities financed partly by the people and either partly or fully by local governments. At that time, Jakarta was the only city that had a clear improvement program of its kampungs that conformed to certain criteria established by the local government.

In 1971, the World Bank expressed its interest in helping some local governments with loans to prepare better improvement programs and to finance their implementation. In 1972, a fact-finding mission came to Indonesia and made short visits to Jakarta, Surabaya, and Ujung Pandang. With the consent of the central government, it offered the local governments some loans to speed up and to improve their kampung-improvement programs. Only the City of Jakarta was interested in accepting the offer. Surabaya and Ujung Pandang were not ready yet to accept the loan assistance.

Based on further studies conducted by a planned community development consultant, a loan agreement was signed by the World Bank and the Government of the Republic of Indonesia in 1974. The total amount of the loan for KIP was about US$18.2 million, which was used to finance 50% of civil works contracts, to improve 1980 ha of kampungs, and to purchase equipment, such as fire trucks and sewage pumps. Funds were also provided to prepare other projects in Bogor, Tanggerang, Bekasi, Semarang, Surabaya, Surakarta, and Ujung Pandang.

While this study was still going on, the second loan agreement was signed in 1976 to finance expenditures similar to the first loan for the cities of Jakarta and Surabaya. The total amount of the loan for KIP in Jakarta and

Surabaya was US$52.5 million to improve 3000 ha in Jakarta and 374 ha in Surabaya. Some funds were also provided to finance studies for the cities of Padang, Palembang, Pontianak, Banjarmasin, Samarinda, and Denpasar.

Based on the studies financed from the first loan, a third loan agreement was signed in January 1979. The total loan was US$54 million to finance KIP and some other related activities in Jakarta (750 ha), Surabaya (580 ha), Ujung Pandang (375 ha), Semarang (310 ha), and Surakarta (170 ha). Some funds were also provided to finance feasibility studies for further kampung improvement and other urban-development programs.

The fourth World Bank loan was negotiated in March 1981. The total loan was US$43 million of which about US$15.5 million was allocated for KIP in Palembang (320 ha), Padang (310 ha), Banjarmasin (320 ha), Pontianak (400 ha), and Denpasar (470 ha). Parts of the loan were also allocated to finance various supporting activities, such as the solid-waste management program, community-health training, external-drainage improvement, land registration, technical assistance on project management, project monitoring and evaluation, and feasibility studies for further programs.

Other international institutions (including the Asian Development Bank (ADB)) are interested in assisting the Indonesian government to finance KIP. They were interested in financing KIP in the cities of Bandung and Medan, and about 30 cities (medium and small) in central Java. A loan agreement with ADB for Bandung was signed in 1979. The total area of kampungs to be improved was 385 ha. Another study has been done for Medan, but no agreement has yet been reached on the financial aid for KIP in that city. For 30 cities in central Java, ADB dispatched a fact-finding mission in February 1981.

Besides international institutions, Indonesia got one offer of bilateral aid from the Netherlands to finance KIP in Bogor (200 ha), Tanggerang (100 ha), Bekasi (100 ha), and Cirebon (200 ha). Also, the Netherlands government provided technical assistance for program preparation, implementation, supervision, and building up of management capability of the KIP implementation unit in each city.

Other assistance for KIP has also been received from UNEP and UNICEF. UNEP provided funds to finance research on the possibility of introducing new technology, such as the use of solar energy and recycling of water, and non-infrastructural concerns like loan provision to kampung inhabitants, and vocational training in promoting home industries. The research was conducted in Bandung and Surabaya. No funds, however, were provided for the implementation of the system tested in the research. UNICEF provided assistance related to children and mothers' welfare and to the general health-improvement and education program, including training in social planning.

Recently, the Swiss government expressed interest in broadening its assistance to the cities of Cirebon and Yogyakarta, from water-supply projects to general environmental sanitation programs by adding sewerage, drainage, and solid-waste programs to support KIP.

Until the end of the Second Five-Year Development Plan, all cities that received assistance for KIP were large and financially strong enough to finance their KIP and to borrow money to speed up their program. The central government only assisted them in looking for financial aid from international financial institutions, such as the World Bank and the ADB, or

Table 1. Proposed government assistance for KIP to 1983/1984.

Type of city	Population size (000)	No. of cities	Target/city (ha)
Big	500–1000	10	200
Medium	100– 500	40	100
Small	20– 100	150	60

from interested donor countries.

At the end of the Second Five-Year Development Plan, the Indonesian government realized that KIP was needed not only in large cities but also in medium and small cities. In the latter, technical resources are so limited that no spare funds are available to finance KIP. Therefore, since the beginning of the Third Five-Year Development Plan, the central government decided to provide financial assistance to small- and medium-size cities. To a certain extent the central government gives grants to all cities as a stimulant to start their KIP activities. In the Third Five-Year Development Plan it is mentioned that, from 1980 to 1984, the central government will assist 200 cities of various sizes to improve a total area of about 15 000 ha of kampungs (Table 1).

Why Kampung Improvement?

Some people may ask why the existing kampungs should be improved. Some may prefer to demolish them and to build new and better housing projects, provided with better infrastructures and facilities. However, the latter is an economically prohibitive proposition. The government cannot afford to compensate residents of demolished kampungs. Furthermore, a renewal project undertaken now will mean that many of the original inhabitants of the kampungs would be moved out to other sites where land and development costs are still relatively low and affordable to them. Such sites are usually located far from the city centre and work places, so they have to bear heavy costs in transportation to their work place. The loss of time minimizes the opportunity for an additional or side job to augment income.

The other disadvantage of urban renewal is the loss of the existing housing stock. The new houses will mostly replace those that have been destroyed for renewal, so that new investment can hardly add to the housing stock. Because there is a real need for new houses to accommodate new families caused by population increase and to relieve overcrowdedness of the existing kampungs, improving the existing kampungs is widely believed to be the superior approach. Improvement costs much less than renewal. Also, new housing is constructed to increase the housing stock.

In kampung improvement, attention is focused on environmental sanitation by provision of paved roads or footpaths, drainage ditches, water supply, sewage disposal, and solid waste collection. By providing those facilities it is expected that people will be induced gradually to improve their houses using their own resources.

Past Achievement and Future Program

Though kampung improvement by popular participation has been

undertaken for many years, no record has been kept. Only those with government assistance have been recorded. Furthermore, many of the kampungs improved by popular participation have been further improved by the government improvement programs.

During the First Five-Year Development Program, the local government of Jakarta had improved an area of its kampungs using its own funds. In the Second Five-Year Development Program, with loan aid from the World Bank, Jakarta succeeded in improving about 2000 ha and the Government of Surabaya improved 440 ha. At that time KIP covered only physical aspects.

Entering the Third Five-Year Development Program there was a big change in government policy on KIP. The government started to improve kampungs in the cities, with the target of 50% of the area of existing kampungs (see Table 1).

The government realized that physical improvement alone is not enough. The ultimate goal is to improve the kampungs as a whole, and to raise the living standards and living conditions of its population. Therefore, physical conditions must be improved along with the quality of life and the economy.

The program for improvement in quality of life is directed toward the improvement and maintenance of nutrition for the people, family welfare, health, and education. This is done first by building up the residents' understanding of the needs for improvements, and their advantages. Then the consciousness of the need for, and advantages of, improvement is developed. Finally, ability and know-how to improve life and to maintain the improved conditions are developed.

The economic- or business-improvement program is directed toward creation of new additional jobs for family members within the kampungs, such as home industries, small shops, and repair shops, to augment their household income. In this program, the government provides various kinds of facilities and assistance to the people, such as small loans with low interest to be used as working capital and help with marketing their products through developing cooperative organizations. Entrepreneurship among the people in the kampungs is also developed.

Thus, the integrated KIP requires the coordination of many institutions such as the ministries of Public Works, Social Welfare, Home Affairs, Health, Trade and Cooperatives, Education, Labour and Transmigration, and similar agencies at the local government level. Semi-governmental and non-governmental organizations in the kampungs play the biggest role, for without their involvement the program would not succeed. To get optimum results from such programs, good coordination is needed among all the institutions involved.

Whereas the implementation of physical improvements has moved fast and with significant success, the non-physical improvement program is still in its initial integration process. No significant results can yet be observed, as experimentation and looking for the best way to do it continue. So far much depends on the local government in coordinating different activities carried out by the different agencies in their territory. The results will vary greatly depending on the existence of a good understanding amongst local government agencies, and between local government and central government agencies operating in the region.

Components and Standards of Improvement

In principle, there are two types of KIP. First, is KIP that is fully financed by a grant from the central government. This program is called KIP Perintis or stimulator KIP. Second, KIP is financed partly by a grant from the central government and partly by a loan guaranteed by the central government or by the local government. The physical improvements covered by KIP Perintis are the improvement, or provision, of roads, footpaths, and drainage and sewage disposal, water supply, and garbage collection facilities.

KIP Perintis

In KIP Perintis, the central government assists the local government to improve about 50% of the kampung area. The program is carried out in four types of cities: metropolitan areas (population >1 million), big cities (500 000–1 million), medium cities (100 000–500 000), and small cities (20 000–100 000) based on population size. The target of improvement of KIP Perintis is 200 ha for the big city, 100 ha for the medium city, and 60 ha for the small city.

The improvement standard for KIP Perintis is Rp2 800 000 (US$4667)/ha, or simply a threshold standard. At this level of resource allocation, only about three or four of the seven components eligible for improvement can be undertaken. The most common components improved upon are roads, footpaths, drainage, water supply, and garbage collection facilities. The types of components included in the program vary from one kampung to another depending on local conditions and the priority expressed by its population.

In the big city, the local government usually has stronger financial resources. Therefore, loan aid is extended to increase the improvement standard up to Rp6 000 000 (US$10 000)/ha, or simply the minimum standard. In this case, the central government will provide 50% of the cost, with the remainder provided by the local government or from a loan to be paid back by the local government. When a local government is willing to finance 50% of the cost, either from its own revenue or from borrowing, the improvement standard can rise above the KIP Perintis target. Using the minimum standard improvement can be realized in all physical components. Also, better education and health facilities can be provided.

There being no physical standard, the important thing to consider in KIP Perintis is that the improved component will function, especially drainage ditches and garbage collection facilities. It is not useful to have good drainage ditches in the kampung if they cannot discharge water to the master drainage system. It is also not useful to have solid-waste collection facilities if there is no system for good collection, transportation, and disposal. The provision of physical standards for KIP Perintis may even cause confusion to the implementors and hamper the implementation.

Loan-Aided KIP

For a loan-aided KIP with minimum cost standards (Rp6 000 000 or US$10 000), minimum physical standards for improvement are introduced.

Roads and Footpaths

All dwellings should be, at most, 100 m from a one-way road and, at most, 300 m from a two-way road with at least a width of 4 m of paved surface. Total road length per hectare (including existing roads) may range from 50–100 m for one-way roads and 15–35 m for two-way roads.

A paved footpath should be within 20 m of every dwelling not located on a road. Footpath pavement width will range from 1–3 m.

Water Supply

Water supply should average 20 L/person/day from public water taps connected to the municipal system by means of a distribution system with a potential capacity of 60 L/person/day, or connected to a deep tube well. Public water taps should be provided so that one tap serves 20 to 50 families, excluding those with existing private facilities.

Sanitation and Drainage

Sanitary facilities for each dwelling should include one water-seal toilet with seepage pit where feasible. Where space or ground conditions do not permit pit privies, small communal toilet facilities with septic tanks will be constructed.

Garbage carts, sweepers' carts, and garbage bins should be provided as appropriate to serve each neighbourhood.

Storm water drainage by means of open channel drains adequate to convey flows caused by annual maximum rainfall should be provided along roads and footpaths. Connecting channels should be provided between local and primary drainage networks as appropriate.

Criteria for Selection of Kampung

As available funds are limited, and only part of the kampungs can be improved, selection criteria are needed to establish priorities for improvement purposes. These criteria are based on the following general guidelines:

- physical condition (those areas with the worst condition should be given priority for improvement)
- population density (high density should be given priority)
- strategic location of kampung with respect to development trends of city
- age of kampungs (older, well-established kampungs should be given priority)
- the kampung-improvement program shall be city-wide in scope
- the kampungs should conform to the general land-use patterns envisaged in the master plan

For further guidance to the planners in the preparation of the priority list, a weighting and scoring system is introduced by putting certain weights to specified items and certain scores to varied conditions of an item. These scores have to be decided by surveyors after extensive field surveys. The results however may be erroneous, firstly, because personal judgement of the surveyors varies and each may give a different score to even the same condition. Secondly, the guideline itself is also based on the

personal judgement of one or a group of people who prepared it. The main purpose of the guideline is to simplify and speed up the evaluation process. The selection criteria being used today are set out in Table 2.

Before surveyors survey the kampungs, it has to be decided whether a kampung should be included in the list or not. This is done by studying the city plan. If the kampung lies in an area planned to be an area of low-cost housing or housing for low-income people, then it can be included in the list. If a kampung lies in area planned for housing for high-income people or other uses there are two possibilities. First, if the plan for the area is soon to be implemented, the kampung is excluded from the list. Secondly, if the plan for the area is not to be implemented for a relatively long time, the kampung may be included in the list. But if the existing kampung is also hazardous to itself and its neighbours, such as posing a flood hazard, the kampung will be excluded from the list.

The described scoring system may be subject to errors. Based on the scoring system, a kampung may have a higher priority than another kam-

Table 2. Criteria being used for kampung selection.

Criteria	Weight value	3 points	2 points	1 point
Flooding	3	50% of area regularly flooded	50% of area regularly flooded	Little or no flooding
Sanitation	3	No septic tank, few individual pit latrines; use of stream and drainage channels	Prevalence of individual pit latrines	Many septic tanks, few individual pit latrines
Public health	3	High incidence of disease	Average incidence of disease	Low incidence of disease
Present or proposed land use	1	Residential	Mixed industrial, commercial, and residential	Industrial and commercial
Vehicular/ pedestrian access	2	Poor; dwelling units located along narrow footpath or off footpath	Fair; some paved secondary streets with much access from footpaths	Good, mainly access along paved secondary roads; little footpath access
Kampung age	2	Pre-1945	1945–1960	Post-1960
Community participation	2	Good	Fair	Poor
Residential	2	>550 persons/ha	350–550 persons/ha	<350 persons/ha
Household income	2	<Rp30 000/month	Rp30 000–60 000/month	>Rp60 000/month
Location	1	City centre	Inside municipal boundary	Outside municipal boundary
General condition	1	Poor	Fair	Good
Housing layout	1	Poor	Fair	Good
Public schools	1	None	Poor coverage	Fair coverage
Impact of improvement program	1	High	Average	Low

pung, but some city officials may judge that the latter is worse. In this case, the responsible city official or officials may decide to change the priority order. This is the general weakness of any effort to quantify. Given its limitations, the system appears to serve the purpose of identifying more accurately kampungs most in need of improvement.

Implementation and Organization of KIP

Organizationally and financially KIP is the responsibility of the local government. For Jakarta, this does not create a problem, as Jakarta is the centre of not only the government administration but also the biggest trade and industrial centre in the country with its related services. Consequently, the Jakarta government has the financial resources to finance KIP fully from its own budget. There are sufficient professionals and technicians to carry out the program without much assistance from the central government. The exception occurs when additional sources of funds are available to speed up the implementation of its KIP. In this case, the central government helps the local government in finding loans from international financial institutions, such as the World Bank.

Some other metropolitan areas and big cities, such as Surabaya, Bandung, Semarang, and Ujung Pandang, also possess relatively strong sources of income. They can set aside some funds from their own budget to implement their KIP, but they still need some financial and technical assistance from the central government. For these cities, and as long as the construction cost does not exceed Rp6 000 000 (US$10 000)/ha, the central government can provide 50% of the total cost of civil works contracts. The other 50% and the overhead cost of the KIP Unit shall be borne by the local government from their internal revenue or from borrowing. If they want to borrow money they would request the central government to assist finding loans from international sources, such as the World Bank, ADB, and bilateral aids. In case the construction cost does not exceed Rp2 800 000 (US$4667)/ha, then the central government will finance 100% of the costs. The implementation of the program is also done by an implementing unit established by the local government called the KIP Unit.

The KIP Unit

Because small- and medium-size cities are usually weak in financial resources, they usually cannot set aside funds to finance KIP. Thus the central government will finance 100% of the necessary budget as a grant to the local government. However, the program itself is implemented by the KIP Unit established by the local government, similar to that in big cities.

The KIP Unit at the local government level is responsible for preparing and implementing KIP works from preplanning through supervision. It has to define kampung areas for improvement, develop a budget and financial plan, prepare drawings and specifications, and manage the contracts. The planning and implementation of KIP are done in collaboration with the communities affected. The KIP Unit informs the kampung committee and non-governmental organization about the program, and provides a forum for discussion and modification of the plan.

In many cases, the KIP Unit is not technically strong enough and the central government usually has to assist them in preparing the program and the projects. The central government may hire consultants to assist them in preparing feasibility studies, project designs, tendering, implementation, supervision, and monitoring. The consultants also provide on-the-job training to the personnel of the KIP Unit in technical as well as managerial fields. The central government assists them also by providing guidance and standards.

Besides the KIP Unit, each city has to establish a steering committee whose members are from various departments of the local city government, such as the Sub-Directorate of Budget and Finance, the City Planning Department, the City Physical and Social Infrastructure agencies, and district heads (Camat), where appropriate. The function of the steering committee is to review the budget and finance plan, to approve the selected kampungs for improvement, to resolve problems of coordination with other municipal departments, and to refer larger policy issues to the city council, the province, and the central government, as appropriate. The committee has the authority to coordinate economic, social, as well as physical-infrastructure programs, together with other development projects of the city. This steering committee is chaired by the Mayor (or Bupati) or other official responsible to him.

At the national level, KIP is the responsibility of the Directorate of Housing within the Directorate General of Housing, Building, Planning, and Urban Development (Directorate General of Cipta Karya), Ministry of Public Works. The directorate is responsible for the preparation of the national annual program and supervises its implementation as carried out by the KIP Unit of the local government. The supervision is done through project managers at the provincial level who directly supervise KIP Units in all cities within the province assisted by the central government. The project manager is also the one who authorizes payments from the central government budget based on the contractor's application that has been approved by KIP Unit managers. The Directorate of Housing also assists local government in personnel development for the KIP Unit by conducting courses for different types of program implementors, such as project managers, KIP planners and designers, field supervisors, and other local government officials involved in the preparation of the local government development program. The KIP Unit is also supervised and guided by the Ministry of Home Affairs, especially on things related to city administration and finance.

Community Participation

Kampung improvement in Indonesia is based on an understanding that the improvement is for the benefit of the kampung inhabitants. It is thus imperative that they participate in the program. They have to feel that the program is their program so that they participate in one way or another.

Community participation is needed at different stages of the program, starting from the preparation or planning stage, and continuing through the construction stage to the operation and maintenance stages.

Planning Stage

At the planning stage the opinions of the inhabitants are needed to determine what parts of their kampung need to be improved and what has priority. This can be done through community meetings under the chairmanship of their elected community organization leader. The leader will then bring the proposal to the KIP Unit through the Lurah and the Camat to be considered in the preparation of the annual program. This direct input to the program will ensure further participation of the inhabitants in the construction, operation, and maintenance stages.

Community participation at the construction stage can be realized in various ways. The easiest and minimum participation expected of them is their favourable attitude, which means that they neither hinder nor obstruct the ongoing construction works in their kampung. If possible, they should help in the construction works so that the works can be completed faster and in good quality. In many cases, the inhabitants are asked to sacrifice some of their land for the construction of roads, drainage, and other facilities. If the land required by the project is relatively small the inhabitants sacrifice it voluntarily. But if the land to be taken by the project is relatively large the community is expected to negotiate compensation for the land. The local government may help to resettle them in other places, but they have to pay for the new accommodation provided for them. The same procedure is also applicable to the buildings that may need to be partially or completely cleared for the new facilities. In cases where they do not reach an agreement, the project is postponed and the earmarked funds are reallocated to other kampungs.

In some cities, such as in Surabaya and Surakarta, the people also participate in the program by providing local building materials, labour, or funds, and the local government provides equipment and building materials that are not available locally. This kind of participation, however, cannot be expected from the poorest people.

Operation and Maintenance Stages

The kampung inhabitants are also expected to participate in the operation and maintenance of the infrastructure and facilities constructed during the improvement program. For certain maintenance works, the participation can be done individually, but for other works the whole community has to be involved. The individual tasks include cleaning of drainage ditches and cutting of grass along roads adjacent to the building lots. Community projects are represented by cleaning open land spaces and playgrounds, public bath- and washrooms, and public taps. These can be undertaken by the residents' own labour or by hired hands.

Conclusions

What started in 1969 as a Jakarta-oriented KIP is now nationally significant in terms of its impact and has gained international recognition for its approach. Although the program was initiated locally and in the first 5 years (Repelita I, 1969–1974) focused solely on Jakarta, subsequent assistance

provided by the World Bank and, to a lesser extent, other international agencies has accelerated the spread of KIP to other Indonesian cities. By the end of 1979, 50% of the population of Jakarta and 10% of Surabaya had benefited from KIP. Put in another way, in just a decade, Jakarta, the largest city in Indonesia, with a population of 6 million, has been able to provide basic services to almost all of the depressed areas under its jurisdiction.

Many factors have accounted for the success of KIP from the outset, including effective program management, political will, and sound budget cycle. KIP has yielded several useful lessons for other developing countries. Firstly, when confronted with the problem of limited financial support from local sources, one way of improving urban services is to adopt the approach of meeting minimum infrastructural needs at low cost. These facilities can be upgraded later when more generous funding is available. Secondly, physical improvement programs are easier to carry out, with social and economic improvement following thereafter. In Indonesia, the socioeconomic component of KIP was only introduced in 1976 when infrastructural improvement had already made significant headway in many areas of Jakarta. Finally, community participation and commitment are crucial to the success of any slum-upgrading program. KIP was initially launched in response to the abundance of poorly serviced and inaccessible kampungs prevalent in many parts of Jakarta. Instead of working for the people, KIP staff have always worked with the people. This makes a tremendous difference, especially in the socioeconomic improvement programs in which full support from the inhabitants is essential.

From the foregoing account and other evaluations, it can be concluded that KIP has more than fulfilled its original expectations and objectives. Over the years, it has progressively upgraded the living conditions of an ever-increasing urban population. From the standpoints of its scale, the number of beneficiaries, and the number of cities affected, KIP is one of the most remarkable slum-upgrading programs in the developing world. The challenge that lies ahead is in effectively extending the program to the innumerable smaller urban areas in the country that do not have the same kind and size of administrative and technical staff that is present in larger cities. There is also the need to maintain the improvements that have been achieved so that the fruits of progress will not be lost through sheer neglect or loss of sustained attention.

Housing Needs and Related Urban-Development Programs and Processes in Hong Kong

E.G. Pryor

Given Hong Kong's limited land area and relentless demographic pressure it has proved difficult for both the government and private developers to keep pace with the rapidly escalating demand for housing, particularly as resources were badly needed in the early post-war years for new infrastructure, land for industry, and various social services. Consequently, large settlements of squatters sprang up, sometimes overnight. Indeed, the number of households living in such areas provides a barometer of the extent to which programs for the provision of permanent housing are succeeding in meeting the demand for housing.

Projections prepared by the Commissioner of Census and Statistics indicate that between 1981 and 1996, the population of Hong Kong could increase by 25% from 5.1 to 6.4 million persons. This represents an average growth of 1.7%/year, which, relative to demographic trends in other Southeast Asian countries, is a moderate rate. However, the number of households is expected to grow at 3.4% per year, due to smaller family sizes and, because housing programs must relate to the accommodation of households, this trend will have major implications in resource allocations for the provision of residential land and housing development. The projections in Table 1 indicate the general dimension of the problem.

The response of the Hong Kong government to the escalation of population growth has been to pursue a vigorous program of land development to provide sites for housing and other urban uses. In broad terms, three development phases can be identified.

1953–1972. The commencement of this phase began on Christmas day, 1953, when a large squatter fire at Shek Kip Mei made 53 000 persons homeless. The land made available by the fire provided a catalyst for the initiation of an intensive program of housing resettlement, whereby low-rental public-housing estates with densities of up to 5000 persons/ha were erected to provide new homes for squatter households cleared from land that was subsequently made available for various urban uses.

It was also recognized by the government that incentives should be given to private developers and, to that end, new control regulations for buildings were introduced in 1956 to permit the high-rise redevelopment of existing properties. The resultant effects on housing supply were dramatic, with the new development being concentrated in the urban areas of Hong Kong Island, Kowloon, and New Kowloon. Generally, however, there was no overall objective for policy except an awareness to produce additional housing as quickly as possible.

Table 1. Projected growth of population for Hong Kong, 1981–1996.

Population growth	1981	1986	1991	1996	Difference 1981/1996 (%)
No. of persons (000)	5167	5556	5935	6254	+21.0
No. of households (000)	1259	1487	1714	1908	+51.5
Average household size (persons)	4.10	3.74	3.46	3.28	−20.0

Source: Commissioner of Census and Statistics.

1972–1980. This phase of development was characterized by a greater appreciation of the need to aim towards the achievement of housing production targets, principally in the public sector, in that, in 1972, the government accepted a commitment to produce low-rental housing for 1.5 million persons over a 10-year period. The broad objectives of this program were:

- to eliminate all squatter areas;
- to provide self-contained housing for all those households sharing accommodation in the private sector;
- to relieve overcrowding in existing government housing estates and to redevelop obsolete estates;
- to provide housing for those people made homeless by government schemes and policies.

Generally, little consideration was given either to the contribution of private developers or to the role that temporary housing and sharing would need to play during periods of housing shortages. Notwithstanding, the public-housing program provided a much-needed impetus and, to achieve the ambitious targets, administrative steps were taken to establish a New Territories Development Department to provide the necessary land and services for six new towns in areas with a combined ultimate capacity of about 2.6 million persons (see Fung Tung, this volume, Figure 1). The result of these efforts so far is that about 2 million persons or 40% of the population now lives in public housing.

Post-1980. A position has now been reached where it is clear that the development capacity of the first-generation new towns will have been realized within the next 10 years and steps are now being taken to identify suitable second-generation new towns to meet housing and other land use needs up to the turn of the century.

The magnitude of the work involved in responding to the long-term housing and other land-use requirements of the territory makes it essential that planning and development programs be carefully orchestrated within a framework that proceeds from general policies to specific details. The system and processes employed to that end are the focus of attention of this paper.

Formulation of Policies and Targets

When the decision was taken, in 1972, to accept a 10-year target for the provision of housing for 1.5 million persons it was recognized that housing

development would be the cornerstone on which to base the planning and development of new urban areas. Thus, the derivation of policy targets for the provision of housing over a given period of time is important in determining the dimension of urban investment programs. One approach to the formulation of policies and targets envisages the following sequence of steps:

- Step 1: Determine the broad objectives to be achieved for a given program, i.e., housing.
- Step 2: Forecast the demand over a given time period.
- Step 3: Estimate the future supply of the service required.
- Step 4: Determine shortfalls in performance relative to the forecast demand.
- Step 5: Postulate and evaluate alternatives for meeting shortfalls and loop back to Step 2 to evaluate the effects.
- Step 6: Decide on a course of action and prepare programs for implementation.
- Step 7: Review.

Step 1: Determining the Objectives

An assessment of the broad dimension of investment programs depends, first, on the specific objectives it is desired to achieve for a given service. In the case of housing in Hong Kong it has been accepted that the long-term goal should be to provide every household with an unshared, self-contained dwelling built of permanent materials at a rent or purchase price that they can reasonably afford.

Step 2: Forecasting the Demand

The next step is to assess the demand arising from, first, existing households and, second, the projected number of additional households over the assumed planning period. This is broken down into the needs for subsidized public-rental housing for low-income households, partly subsidized home-ownership dwellings for middle-income groups, and open-market dwellings for upper-income households. The demand for housing in Hong Kong arises from three sectors, namely, the public-housing sector, the private-housing sector, and the termporary-housing sector. The estimates for each in Hong Kong, in 1980, are given in Table 2.

To the estimates of current housing needs must be added forecasts of the future demand over a given planning period and any adjustments to current needs that might arise as a result of potential changes of household incomes. Over the period 1980 to 1985, the estimates for Hong Kong are as given in Table 3.

Steps 3 and 4: Estimating Future Housing Supply and Determining Shortfalls

An estimation of the future supply of housing must take into account not only existing self-contained flats that are likely to become vacant as a result of turnover, but also the production of new flats determined on the basis of known or assumed programs in the public and private sectors. This process requires a degree of guesswork, particularly with respect to private

Table 2. Housing demand (no. of households) in Hong Kong, 1980.

Type of housing	Sector from which housing need arises			
	Public	Private	Temporary	Total
Public-rental housing	140 000	77 000	120 000	337 000
Home ownership (government subsidized and private)	20 000	133 000	20 000	173 000
Total	160 000	210 000	140 000	510 000

Table 3. Estimates of housing demand (no. of households) in Hong Kong, 1980–1985.

Type of housing	1980 demand adjusted for income changes	Additional demand 1980–1985	Total demand 1980–1985
Public-rental housing	257 000	101 000	358 000
Home ownership (government subsidized and private sector)	253 000	189 000	442 000
Total	510 000	290 000	800 000

Table 4. Projection of housing situation for Hong Kong, 1980.

Demand/supply	Public-sector housing	Home-ownership housing	Total
Potential housing demand 1980–1985 (households)	358 000	442 000	800 000
Potential housing supply 1980–1985 (flats)	184 000	188 000	372 000
Shortfall (flats)	174 000	254 000	428 000

housing, the production of which tends to be cyclical according to the level of effective demand. However, given such estimates, a comparison can be made with the forecast demand which will then indicate the likely extent of shortfalls or even overproduction. A review of the situation in 1980 produced the results given in Table 4.

Step 5: Postulating and Evaluating Alternatives for Meeting Shortfalls

From Table 4, it is apparent that the supply of housing forecast in 1980 would not meet the objective of providing every household with a self-contained flat by 1985. Under such circumstances it is imperative to consider the means by which the gap between demand and supply can be narrowed. The principal alternatives include:

(a) Taking steps to boost supply through such means as increasing densities, providing additional sites, and offering incentives to private developers.

(b) Redefining the categories of households eligible for self-contained housing, e.g., by excluding a proportion of the one- and two-person households that can be expected to share accommodation.

(c) Redefining the type of accommodation considered to offer a satisfactory standard of housing, e.g., dwellings in which households have to share toilet facilities may be considered acceptable.

(d) Limiting the assessment of demand to levels determined both by the

capacity of the construction industry and by the redefinition of rehousing targets for specific categories of public- and private-sector households.

Thus, in a situation where potential demand far exceeds supply, it is essential that consideration be given to all four of those options. In Hong Kong, a consensus was reached that has resulted in the policy approval of the following targets:

1. The annual production of not less than 30 000 public-rental flats, generally for low-income households.
2. The annual production of 10 000 flats per year for government-sponsored home-ownership flats, generally for middle-income households.
3. The maintenance of a high level of production in the private sector, assumed to be about 30 000 flats per year, generally for upper-income households.
4. The provision by government of additional temporary housing for 50 000 persons.

In deciding on such targets, it has had to be accepted that there must be an integrated housing and land policy that recognizes the complex interaction that exists between:

- the range of household incomes;
- the degree of subsidy by government on land and capital finance;
- the capacity of the construction industry to produce new permanent housing;
- the involvement of financial institutions in making mortgage financing available;
- the restrictions placed by government on rents and the resale of property;
- the role of sharing and squatter housing as an expedient.

The combination of these factors is illustrated by the model (Figure 1) which indicates that, over the income scale, there has to be a range of housing types, the rents and purchase prices of which must be set at levels appropriate to affordability. In turn, affordability is affected by the degree of subsidy by government on land and capital finance as well as by the mortgage terms offered by financial institutions. The greater the degree of subsidy, the tighter should be restrictions on resales. The model also indicates that policies should encourage upward mobility in the housing market and that, during times of restricted supply of permanent housing, sharing and squatting have to be tolerated.

Step 6: Developing Programs

Having established targets for housing production that are considered to be within reasonable practical limits, detailed plans and programs can then be drawn up for implementation. The foundation for such programs is an adequate supply of land that must be planned for in the short, medium, and long term. It is at this point that strategic, long-term planning considerations must first be examined with regard to the short- and medium-term life expectancy of current production plans for urban land.

Long-Term Development Strategy

On the basis of the housing-policy targets approved in 1972, steps were

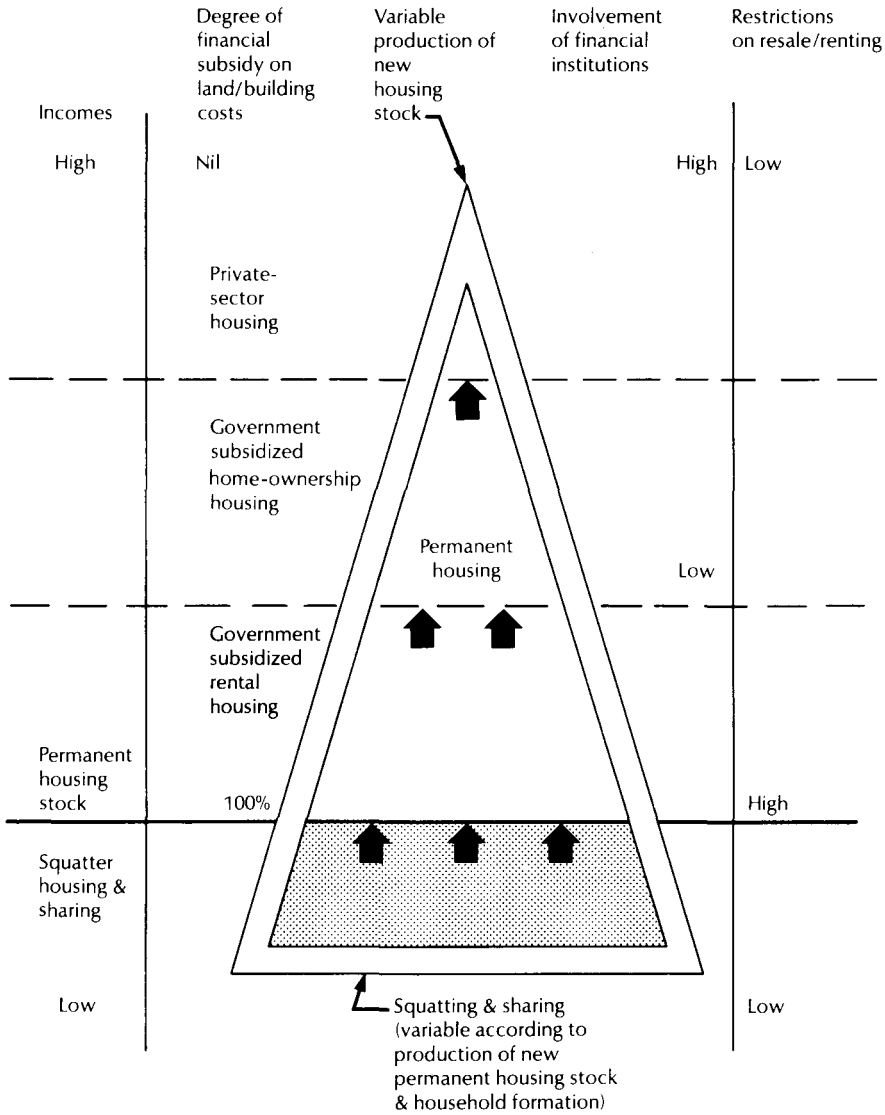

Fig. 1. Housing model for Hong Kong.

taken to develop six new towns and, given current development programs, the development potential of these first-generation new towns should have been largely absorbed by the end of the 1980s.

To sustain housing production at agreed target levels in both the public and private sectors in the 1990s, it will be necessary to start producing a steady flow of sites in second-generation new towns and urban extensions as from 1984/1985. Two additional new towns have already been identified at Junk Bay and Ma On Shan, and work has started on planning and land production that is likely to be spread over 7 or 8 years. However, these two areas are likely to accommodate only about 500 000 persons, which would be equivalent to a 2-year supply of housing.

The search for additional areas must therefore proceed and this will need to be undertaken in a systematic way so as to ensure that the final choice of a long-term development strategy will optimize the use of scarce resources. To this end, the basic approach will require:

- an assessment of the development potential of each sub-region for incremental levels of population growth;
- the postulation of a range of long-term territorial population distributions;
- the testing of each alternative population distribution from a transportation point of view;
- the merging of land development and territorial transportation costs to derive a series of land-use and transportation concepts;
- the evaluation of each concept in terms of general feasibility, political acceptability, effects on environment, etc.;
- the selection of a preferred concept, the designation of new areas for urban development, and the determination of a broad time scale for the implementation of work.

One of the main evaluation criteria that will influence the selection of a preferred strategy will be the principle that areas selected for development should follow a progression involving the resolution of the least threshold limitations, i.e., difficult areas should be left for later stages of development. Also, the preferred strategy should encourage public and private investment to follow common directions of growth. Another important principle is that development risks should be carefully spread. Finally, the preferred strategy should attempt to ensure that every dollar invested in major infrastructure should aim to have a multiple development benefit. Thus, it is important to ensure that, as far as practicable, major economic development projects such as a replacement airport, new container-port facilities, and industrial estates are serviced by transportation corridors along which there are opportunities for housing and other related urban development.

Planning and Programing of New Urban Development Areas

To meet long-term needs for housing and related urban uses, it is to be expected that additional urban areas of some considerable magnitude will be required. Once such areas have been identified within the framework of a long-term development strategy it will be necessary to proceed with planning and the formulation of development programs.

The planning of new development areas can be expected to follow broadly the pattern already established for first generation new towns, beginning with desk-top studies that, for a predetermined population, will have to quantify the broad land-use needs required for:

- public-rental housing for low-income groups;
- government-subsidized house ownership; schemes for middle-income households;
- private housing for upper-income households;
- manufacturing industry;
- district open spaces and specialized recreation facilities;
- major community uses such as hospitals, technical institutes, and civic centres; and

- major utility installations such as sewage-treatment works, and refuse-disposal facilities.

Determining land requirements for such uses requires that assumptions be made as to the standards of provision considered appropriate for long-term planning purposes. Such standards were formulated through interdepartmental consultations having regard to policy objectives in various fields, including education, social welfare, medical and health, housing, industry and commerce, recreation and sport, and transportation. It is the normal practice for standards to be approved by the Land Development Policy Committee (LDPC). Standards are kept constantly under review in the light of feedback surveys and the introduction of new policies approved by the Executive Council.

The next step requires the broad assessment of land-use requirements to be translated into a conceptual plan. For this purpose, a complete inventory of the existing characteristics of the development area needs to be prepared including established land uses and land status, landscape features and topography, geological and geotechnical characteristics, drainage patterns, water depths, potential sources of fill material for reclamation works, alignments and capacities of utility services, transportation routes and services, and existing demographic profiles and settlement patterns.

Various concepts of urban forms then need to be derived and evaluated against a set of environmental, sociological, financial, and economic objectives. In this process, assessments also need to be made of the future travel demands and the type and capacity of transportation facilities required to provide a satisfactory level of service.

Complex studies may be required using computerized modeling techniques to derive the most cost-effective and time-effective solution to transportation. Similarly, studies also need to be made of future requirements for the provision of utility services including water, electricity, gas, sewerage, and refuse disposal.

In due course, a preferred pattern of land use and supportive infrastructure can be derived and phased for progressive implementation. The normal practice in Hong Kong is for development plans to be arranged in a series of packages, each of which can, if necessary, stand as self-contained entities should circumstances require a curtailment of work.

The broad conceptual plans and development packages then provide a basis for the formulation for each package of detailed implementation programs for the production and development of land. This process, in itself, is a complex system involving six major steps: land acquisition (where private land is required); land clearance; land formation; provision of services; release of sites by allocation, sale, or tender; and building development.

Land Acquisition

Under the Crown Lands Resumption Ordinance the Governor-in-Council may declare any work to be a public purpose for which the land needed may be acquired compulsorily by government. After the gazetting and posting of resumption notices, negotiations may be entered into

between government and landholders to settle upon a purchase price but, if necessary, a tribunal may be appointed to reach agreement thereon. No appeals against decisions taken under this ordinance are allowed. Such procedures are followed in the urban areas of Hong Kong Island, Kowloon, and New Kowloon and may be applied in urban layout areas in the New Territories. On this latter account, however, a unique administrative process exists whereby private land may be acquired by government by means of letters of exchange called letters "A" and "B." Letter "A" is used where resumption proceedings have not commenced but circumstances require the early possession of a site. Letter "B" is used where resumption has already been gazetted, and it takes the place of negotiations that would otherwise ensue under the Crown Lands Resumption Ordinance.

Under the letter of exchange system, the first step is to prepare and approve a layout for a proposed urban area that may contain a number of private lots. The locations, dimensions, area, status, and ownership of each private lot are carefully recorded. When the scheme was first introduced, the owners of agricultural lots (which comprise the majority of landholdings in the New Territories) were offered an exchange of 2 m^2 of urban land for every 5 m^2 of agricultural land surrendered. For urban land the ratio of exchange is 1:1. Letters of entitlement are issued accordingly and registered by the Land Authority. Exchanges are effected when government has land available in an urban layout for private residential, commercial, or industrial development. Exchanges may be offered in any layout area in the New Territories. Sites are normally made available through tenders open to holders of letters of exchange, the successful tenders being decided on the basis of the age and area of the letters of exchange surrendered. Successful tenderers must then pay to the government the difference between the area of entitlement at the respective urban and agricultural values set at the date of surrender. Periodic land sales and reviews by government of agricultural land values fix such rates. The difference is essentially a betterment rate to cover the costs of land formation and the provision of services. Any incremental value of sites since the date of exchange accrues to the successful tenderer.

If holders of letters of exchange so desire, they may, at any time, sell their entitlements on the open market and, over the years, a very active brokerage system has developed. By and large, this system has been well accepted by landowners and has provided an effective means for the assembly of land.

The ratio of 5:2 exchange was devised on the basis that, under normal circumstances, it would be reasonable to expect that 40% of a layout area could be made available for private development. However, over the years, more land has had to be provided for community uses, highways, and other public uses so that the exchange ratio has been adjusted to 5:1 plus an ex-gratia cash payment (currently HK$1108 or US$201/m^2) for 50% of the area of lot holdings. There is currently a backlog of about 1 million m^2 net but it is anticipated that this commitment could be met within the next 5 years.

The system does not discriminate between residential, commercial, and industrial sites nor between variations in permitted building density in such zones in terms of the rates of exchange. With the benefit of hindsight,

it might have been appropriate to have recognized the differential values of sites in different zones.

Land required for a public purpose must be gazetted with the approval of the Executive Council and it is the practice to acquire only that area which is strictly necessary for the implementation of works. The entire process of demarcation, gazetting, negotiation, and reversion takes between 9 and 12 months.

Land Clearance

With but few exceptions, private or crown land required for a public purpose requires the clearance of domestic and non-domestic structures, the greater proportion of which usually comprises squatter huts. For those occupants of huts recorded in a 1976 survey who have a majority of household members with 15 years or more residence in Hong Kong, new housing in public-rental estates is offered along with domestic removal allowances. For other occupants, new accommodation in areas of temporary housing is made available together with ex-gratia payments to help cover the costs of re-establishment. Between 1967 and 1980 about 327 000 persons were rehoused in rental estates and 86 000 persons were moved to temporary housing.

For workshop operators occupying structures covered by the 1976 survey, certain trades may be offered new accommodation in government-built flatted factories[1] at commercial rents or may opt for ex-gratia compensation. Noneligible trades receive only ex-gratia compensation. Between 1972 and 1980, for example, over 6500 factories were cleared; of that total 26% were reprovisioned in flatted factories, 42% of admissible trades opted for cash, and the balance of 32% comprised ineligible trades entitled to ex-gratia payments only. For shops, schools, welfare premises, and agricultural holdings various rates of ex-gratia payment apply.

In the quest to provide more land for development every effort is made to soften the disruption to people and businesses. That such policies have been successful is indicated by the generally few occasions when there have been direct confrontations between government officials and squatters, and also by the impressive record of land made available for permanent use.

Land Formation and Provision of Services

Land formation is usually undertaken by means of terracing hill slopes and using the excavated material to reclaim areas of seabed or to raise the level of valley sites. Such work is undertaken by private contractors through competitive tender and occurs soon after the completion of land resumptions and clearance. The provision of roads, water, storm-water drainage, and sewerage is planned through each new-town development office and construction is also undertaken by private contractors. Utility companies undertake the provision of gas, telephones, and electricity.

[1]Flatted factories refer to multi-storied buildings specially built to accommodate usually small-scale and unobnoxious industries for economy of land.

Release of Sites and Building Development

For private residential, commercial, and industrial development, sites are released onto the market either by auction to the highest bidder or by tender to holders of letters of exchange entitlements in urban layouts in the New Territories. The rate at which such sites are released and their locations are determined by a centrally controlled Land Disposal Sub-Committee of the Special Committee on Land Production (SCLP), which, each year, sets targets with regard to policy objectives. Building covenants are usually imposed requiring the completion of work within 3 years.

For non-profit making organizations that wish to establish new community facilities, land allocations at nil premium may be granted. Also, sites are made available for government-funded facilities to be built within the context of a public-works program that determines priorities and regulates the sequence of events from design to allocation of funds and the letting of contracts for such facilities as schools, community centres, bus termini, and clinics. Private treaty grants at full market value are made to those undertaking the development of public utilities.

Public-Housing Program

Within each new-town development program there are, as indicated, a number of sub-programs, the principal one relating to public housing for which an overall target has been set at 35 000 flats per year. To achieve this target, a sophisticated monitoring system has been set up that spans a 10-year development period, with detailed programing being undertaken for projects in the first quinquennium, and general programing being undertaken for projects in the second quinquennium.

For projects included in the first quinquennial period there is a comprehensive breakdown of estates planned to come on stream in both the new towns and the main urban areas. Each estate has a designated capacity in terms of population and flats and, at the commencement of each fiscal year, a target completion date is set, from which point programs are derived in a backward sequence with respect to all the main components and tasks involved in planning and building a new estate. The principal tasks include building construction, piling work, site-formation work, and many others.

Certain of the tasks may overlap and, on average, the total lead time for the completion of a new estate is about 5 years. At present, there is a total of 150 projects due for completion by 1985/1986 and, for each project, up to 20 different agencies are involved. There are at least 10 major items that need to be brought to fruition for every new scheme and so that production targets can be kept on schedule, great care has to be exercised over the monitoring of progress from various sources of information including regular progress meetings, site reports, telephone calls, and routine correspondence.

As information is received, key factors are recorded in chart form to determine whether any delays are likely to be incurred. If so, decisions have to be taken as to whether delays can be made good either by the

application of additional resources to the project concerned or by the advancement of an alternative project. Virtually every day, corrective action is taken and, in each quarter, a major review of the entire program is undertaken.

Computerized systems are used extensively in the monitoring process. The monitoring system for the public-housing development program has now been in operation for about 5 years and the sophisticated processes used have succeeded in keeping overall delays to a minimum.

Another factor that has contributed significantly to the sustained achievement of high levels of flat production has been the use of standardized planning parameters and block designs. In the case of planning parameters, government has devised a comprehensive set of standards for the provision of schools, parking spaces, markets, welfare uses, recreational facilities, and hostels. The Hong Kong Housing Authority has also devised a set of standard domestic block designs that greatly facilitate the preparation of layouts and contract documents. Coupled with this, is the establishment of very precise administrative procedures for the circulation of layout proposals to appropriate government departments and utility requirements to make sure that all requirements have been met. The end result, generally, has been the creation of new estates of bold design that provide a good environment for the creation of new communities.

Balancing Objectives of Physical and Fiscal Planning

Whereas the program for each new town is reasonably self-contained, the general pace of development for new towns and public-housing estates depends largely on the ceilings set by government on capital expenditures within the context of overall budgetary strategy. Thus, each year the development objectives considered necessary to be accomplished over the next 5 years have to be costed, with the totals set against expenditure ceilings. Generally, the new-town programs are housing led. In this field, priority is given to direct capital expenditures on public housing whereas investment in site formation is the principal means by which government assists in promoting the development of private housing. Adjustments may be required until a balance is achieved between the objectives of physical and fiscal planning. Subsequently, detailed development programs for each new town and for the public-housing program can be made final and issued as a basis for the implementation of works in the following financial year. Even with such ceilings, the capital expenditures on the new towns and public housing are very considerable, reaching about HK$3600 (US$655) millions in 1980–1981 (excluding home-ownership schemes that are self-financing).

There can be no doubt that since 1973, remarkable results have been achieved, as seen by the rapid transformation of new towns from quiet agricultural communities to busy urban centres. In the field of public housing alone, between 1974 and 1980, a total of 107 000 flats were completed and, over the next 5 years, the current program is expected to yield a further 35 000 flats per year. With regard to the private sector, performance has also been very encouraging with a gross increase of 152 000 flats between 1974 and 1980. Given continued buoyant demand and the steady

supply of sites (including sites made available through redevelopment) private developers could well maintain a production level of 30 000 flats per year.

It may be expected that such development programs will continue, seemingly under their own momentum, but it must not be overlooked that, in Hong Kong, the following considerations and constraints must be allowed for.

(a) The very success of Hong Kong in various socioeconomic fields has itself contributed to recurrent and unforeseen influxes of people from China. This in turn has, at times, threatened to overwhelm the progress made during periods of stability. The best that can be hoped for in future is that, in periods of restricted immigration, sustained high levels of production will start to make significant but relatively temporary inroads into the escalating demand.

(b) Hong Kong's economy depends on international situations largely beyond the government's control. Coupled with this is the high dependency of the construction industry on imports of basic building materials, which requires heavy outlays of foreign exchange. Investment decisions affecting capital works depend very much on Hong Kong's economic position, which can change dramatically in a short space of time.

(c) Even during periods of economic growth, budgetary strategy may require that financial controls be imposed on public-sector expenditure to counter inflationary trends. Such controls affect government spending, curtailing, for example, land production and infrastructure programs that subsequently affect the supply of both public and private housing.

(d) It is well known that Hong Kong has only a limited area of easily developable land and faces considerable difficulties in either acquiring or forming sites. Land for housing must be considered in relation to other essential community uses, including industry, social facilities, recreation, infrastructure, and transportation.

(e) Even if these constraints can be resolved, there remain limits to the capacity of the construction industry arising from competition among various sectors of the industry for skilled labour, materials, and contractors. Generally, the capacity of the construction industry can be improved only by degrees.

(f) Government has periodically found it difficult to compete with salaries and conditions offered to professional staff in the private sector, and thus, development surges tend to parallel heavy expenditures in the public sector.

Conclusion

Hong Kong has embarked on extremely ambitious programs for urban and public-housing development of which a fairly long-term view needs to be taken. The system required to bring these programs to fruition is now well established and, generally, performance has been good. The success of the system hinges largely around the coordinated flow of information and monitoring through executive committees working in the context of the government's overall policies for fiscal and socioeconomic development. Future performance will have to take account of various constraints,

the nature and effects of which cannot be predicted with great certainty. Nevertheless, the formulation of integrated programs can at least help to ensure the evolution of urban forms that, at any given stage, can stand as reasonably balanced and successful systems.

12

Public-Housing Management in Hong Kong's New Towns

Fung Tung

In 1972, a new public-housing program was launched in Hong Kong under the instruction of the Governor. The program was aimed at rehousing some 1.5 million people in public housing within the next 10 years.

Up to 1972, the development of public housing in Hong Kong had concentrated mainly on the urban areas of Hong Kong Island and Kowloon Peninsula, although a few housing estates had been built in Tsuen Wan and other parts of the New Territories. The new-housing program envisaged that, because of the shortage of land in the urban areas, half of the population to be rehoused would be in the New Territories. This brought about the rapid expansion of public housing in the development of the new towns (Figure 1).

At the start of the program, three new towns were identified, Kwai Chung, Tuen Mun, and Shatin. Each was designed to house eventually a

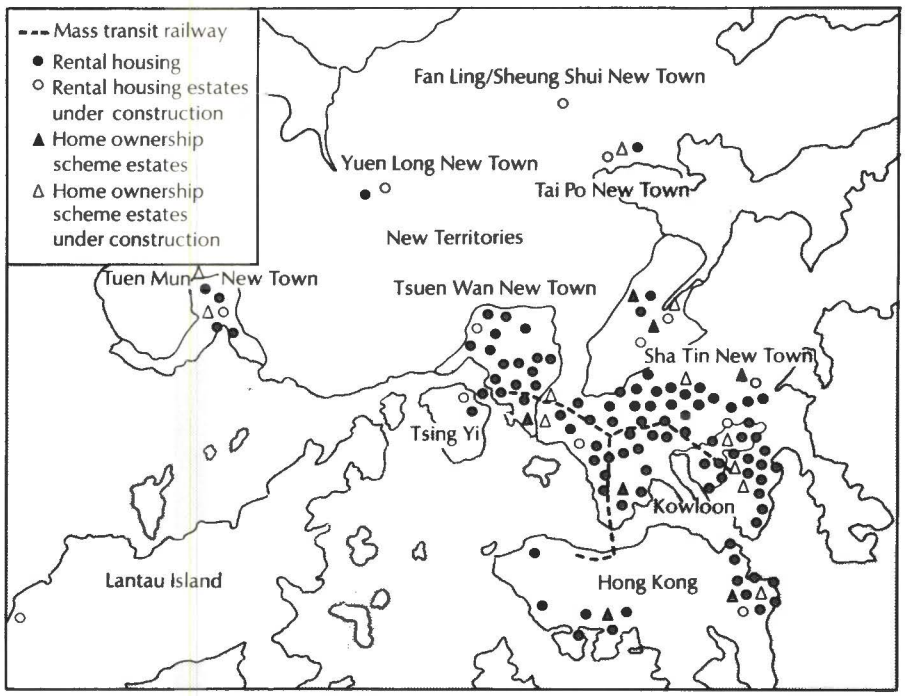

Fig. 1. Location of housing estates.

population of more than half a million, 60 to 70% of which would live in public housing. Public housing and commercial developments in the new towns, not unlike those in the overcrowded urban areas of Hong Kong and Kowloon, are high rise. Residential blocks are currently being built to a height of 20 storeys or more, and commercial centres, if not located within residential blocks themselves, will usually be in three- to four-storey buildings.

Development of New Towns

The development of new towns has been carried out under a new government department called the New Territories Development Department, established within the Public Works Department in 1973. Each new town project is under the direct control and supervision of a project manager who discharges the duties of developing the land as well as the infrastructure within the new town, and who coordinates the various services to be provided. The general concept is that the development will be divided into different parts and care is taken to see that, at each stage of the development, housing and industries grow in parallel steps, together with the full range of community and social services.

It is estimated that a large proportion of the population in new towns will be living in housing provided by the Housing Authority. For example, when the new town of Shatin is completed, some 300 000 people living there will be either tenants of rental public housing or owners of their own flats under home-ownership schemes.

Thus, the Housing Authority, as the executive arm of the Housing Department, is the main agency for the provision of housing in new towns. The pattern of development of public housing in the new towns follows that developed by the Housing Authority in the late 1960s and consolidated in the seventies, of which the Wah Fu Estate on Hong Kong Island is an early example. Basically, each housing estate provides not only dwelling units but also the full range of community and social services, as set out by the Hong Kong Outline Plan standard. Commercial facilities include shops, markets, and restaurants, and community services comprise schools, nurseries, kindergartens, social welfare centres, and agencies. Generally speaking, apart from employment opportunities, each housing estate is self-contained and provides for the general well-being of the residents.

Hong Kong is so acutely short of land that the provision of open space in housing estates is often looked upon as a luxury. Although the Authority's more recent developments in the urban areas compare very favourably with many private equivalents in this respect, public-housing estates in the New Territories fare even better. Earlier projects used a standard of some 2500 persons per hectare — a figure that suggests comparatively low-density development in Hong Kong! The recent trend has been for higher-density provisions, but because of the Authority's ability to adopt more-efficient designs and layouts open space in the estates remains relatively well provided for.

District Administration in the New Town

As previously mentioned, the detailed planning and development of

Shatin is being carried out by professional teams under the control and direct management of a project manager. These tasks are carefully monitored at every stage of development.

To achieve proper coordination, a District Management Committee has been formed for each new town. This is a working committee comprising representatives from all the departments that have an interest in the development of the new town. Housing, being a chief component, is represented at a very high level. Other core members are representatives from the New Territories Services Department (providing such services as cleansing, marketing, and garbage disposals, etc.), police, transportation, sports and recreation, and the project manager. Other government departments such as Social Welfare, Education, Labour, Fire Services, Medical and Health, may be called upon to discuss specific subjects relevant to them. Committee meetings serve the useful purpose of exchange of records of progress as well as information relating to various stages of development, thus enabling the departments concerned to gear their own activities to the needs of the new town.

On the political side, consultative machinery of local administration exists in the form of the District Advisory Board (DAB). The Board is chaired by a district officer of the New Territories Administration, and represented on the official side by various major government departments including Housing, New Territories Services, Social Welfare, Sports and Recreation, and a number of unofficial representatives appointed from the local community. In March 1982, an election was to be held so that a number of directly elected members would be able to serve on the District Board. The main tasks of this board are to advise on matters affecting the well-being of the inhabitants of the district and on the provision and use of facilities, to undertake minor environmental improvement schemes, and to promote recreational and cultural activities.

Within the public-housing estates the general formation of Mutual Aid Committees (MACs) has been encouraged. These committees generally confine their activities on the basis of a particular block, housing usually from about 700 to 1000 families. The primary responsibilities include coordination of the efforts of tenants in combating crime and on matters of cleanliness. Many of these MACs have proved to be very effective and useful in these specific tasks and form an important link between the tenants, as a group, and the estate office in their monthly meetings with the housing staff.

Structure of Estate Management

The development of new towns calls for an additional structure in the management system to cope with the expanded responsibilities, both functional and geographical. One significant feature of the management system that has emerged has been the division of the whole territory of Hong Kong into a number of districts for management purposes, each under the direct supervision of a senior housing manager. The old practice of grouping estates into "A" estates (former Housing Authority estates) and "B" estates (former resettlement estates) for management purposes now no longer exists. Each district senior housing manager is responsible

to an assistant director for the complete range of management duties of the estates under his charge. Although based in headquarters in central Kowloon, the compact size of the territory of Hong Kong permits frequent commuting between a district senior housing manager and the estate offices. The manager, therefore, acts as a very useful direct link between the operational management "fronts" and the central headquarters policy machinery, which enables quick decisions geared to tenants' needs to be made, thus ensuring efficiency in management. It also enables headquarters to assess the tenants' reactions to important policy issues with a certain degree of accuracy. In the Authority's numerous rent increases in recent years, both in the residential and commercial sectors, information provided by housing managers, co-ordinated and monitored through senior housing managers, proved to be of tremendous value in the implementation of such increases.

Besides acting as a useful link between headquarters and the district, the senior housing manager leads a team of five or six housing managers, in carrying out the day-to-day management functions on the estates. The senior housing manager, being familiar with local situations, also acts as the departmental representative on district advisory boards, management committees, and other inter-governmental meetings. Each housing manager takes charge of one or two housing estates, depending on size, supported by a staff of estate officers.

Another significant introduction to estate management since the mid-1970s has been the adoption of a centralized allocation system and the use of a computer for application work. The old practice of allocating a certain number of flats to a particular rehousing category meant that prospective tenants did not always get what they wanted in terms of location, size, and rent. Furthermore, any operational delay would result in flats not always let in time and flats standing empty for a length of time, whereas long queues of applicants were waiting anxiously to obtain any housing that could be made available. The centralized allocation system, introduced in late 1974, overcomes many of these problems, and the freedom of choice of available properties now afforded to applicants proves an invaluable tool for satisfying tenants.

The computerization of applicants' and tenants' records, operative since 1978, means not only a more speedy and efficient processing of cases of rehousing, but also enables the Housing Department to uncover a fairly large number of duplicate applications and tenancies. This results in action being taken to recover premises from families who hold more than one tenancy with the Authority.

Apart from such basic functions as repairs and maintenance, rent collection (performed by housing assistants door-to-door), tenancy control, and lettings, the housing manager has now a much wider range of duties to perform that, relative to past practice, now take up a much larger proportion of the staff's time. The letting of commercial properties can be cited as an example. In this respect, the housing manager's duties include the study of the design and layout of shopping centres with a view to making comments for project architects for possible changes and improvements. In conjunction with the district senior housing manager a pattern of designated trades is also worked out, and at the same time, a program for letting is considered. This may involve dividing the letting of the shops into

several stages so that the need of the tenants can be carefully assessed while the business of the centre can be built up steadily. When the actual letting is invited, the housing manager interviews the prospective tenants and makes recommendations to senior officers for the acceptance or rejection of the tenders. After the acceptance of a tender, the housing manager continues to be associated with the tenants in the subsequent control of the shop. What has been described, however, applies only to the most straightforward cases. With some special lettings, such as that for a cinema or a large department store, there is even greater involvement.

All in all, the presence of a housing manager on the estate is found to be very important for good and efficient management. A better service is provided to the tenants, and problems are dealt with speedily on the spot.

Community Development

Like their counterparts in other parts of the world, housing managers in Hong Kong do have to spend a good deal of time in community development work in the new towns. They generally agree that because of the gregarious nature of the Chinese, little effort is needed to help the families moving to new towns to settle down happily and quickly. For example, the problem of loneliness in new towns has rarely become a major concern. Whereas the special characteristics of Chinese tenants may have accounted for this rather happy condition, the comprehensiveness of housing developments in Hong Kong must necessarily be considered another factor that makes the move to a new town so acceptable.

Housing blocks and housing estates are usually let within months of completion, with the provision of commercial and community facilities at about the same time. Getting to know the various provisions within a housing estate is never very difficult because the developments are compact and there is always an on-site estate office with a willing staff ready to help. Other community agencies nearby also make life in the new towns easier and more pleasant. On a new estate in a new town, a tenant never has to go very far to have arrangements made for the decoration of the home, or to have gas and electricity and other services connected to the flat. All these facilities are usually situated almost next to the estate office. Whereas a housewife living in the urban centre may have to put some effort into finding a suitable school for her children, the tenant of a new town always finds several schools in or near to the estate from which to choose. The list of conveniences could go on.

Estate management staff do try to make things even better. It is the habit and duty of a housing assistant to give time to a tenant during the signing-up interview so that the families can ask questions about schools, clinics, bus and train schedules, and the like; other information on social centres for the elderly, boys' and girls' clubs, and welfare and recreational agencies is readily provided in freely distributed booklets. Housing assistants are also instructed to visit families during the first week after their move to give advice on decoration, maintenance, and any other matter with which the family may need help. These actions are considered tremendously helpful to a family moving in, and provide a start to establishing a good landlord-tenant relationship.

As soon as a block is fully occupied, the housing manager watches out for potential tenant leaders, encouraging the formation of MACs. Such committees have as their basic function the organization of tenants into responsible groups to help to maintain peace and security within the block and also the staging of "Keep Clean" campaigns. Through such activities, tenants develop a sense of organization and community spirit and eventually get themselves interested in other matters of mutual concern.

Housing managers have regular meetings with the MACs and discuss with them matters of mutual concern. Through these contacts, the department is constantly made aware of the views of its tenants and, in return, conveys the management view on policy matters to the tenants. Very satisfactory results have been produced.

On new public-housing estates in the new towns, various social agencies have been set up. Also, there is always either a community centre or a community hall where activities are staged not only for young people but for the adult population, such as sewing classes, photographic exhibitions, or drama groups organized by voluntary or government agencies. This provides further scope for community development. There is, in recent years, a tendency for estate tenants to stage carnivals, festival celebrations, and small sports events. Thus, although commercial entertainment in a new town such as Shatin is generally underdeveloped in the early stages of development, social activities are rarely lacking.

In the early days of public housing in Hong Kong, landscaping did not play a significant part in the housing manager's duties. A number of very pleasant schemes were produced because of the individual efforts of the housing managers in charge. In recent years, in the development of large housing projects, landscaping and planting have become an important part of the development program. Not only have funds been set aside at the outset of the project to provide for amenities but much more effort has been given to the planning and setting up of amenity areas on estates.

Housing managers in Hong Kong, because of their traditional interest and skills in planting, have played a very active part in the development of landscapes on the estates. Many of them have worked hand in hand with the Authority's landscape team to provide schemes for estate planting; sometimes the more experienced are entrusted with the production of landscape schemes by themselves.

For the new town of Shatin, the government commissioned a comprehensive landscape study. The importance placed on this significant feature in the development of the new town is echoed enthusiastically from the public-housing estates. Tenants' response to this amenity provision has been most encouraging. There has been very little damage or vandalism, thus enabling such new housing estates as Lek Yuen and Wo Che to have already a rather mature and pleasantly green outlook. To foreign visitors such amenities may not always be appreciated immediately, but for the average families in Hong Kong used to the sight of concrete jungles in urban areas, gardens and amenity areas in public-housing estates provide almost the feeling of suburban living. This is of significant social and environmental value, and contributes enormously to a feeling of pride for living in a housing estate.

Commercial Facilities in Public-Housing Estates

With a few exceptions, early public-housing estates in Hong Kong incorporated very little commercial development. Where shops were provided, they were usually small convenience shops aiming to meet tenants' daily needs, with items such as cigarettes, candies, and groceries. Tenants were expected to do their main shopping outside the estates. Whereas such a concept produced some very pleasant residential schemes under the old housing authority, the result was not wholly satisfactory. It has been argued that because of the lack of adequate shopping facilities, hawkers were drawn to operate inside the estates thus causing various environmental problems. However, this has been viewed with a certain degree of skepticism by some, because on a number of housing estates where shopping facilities were adequately provided hawkers were still attracted. It is now generally accepted that where shopping facilities are provided, they have to be planned with extreme care. The location of markets and shops must be in such a way that they are not open to the outside public roads or public open grounds where hawkers can take advantage by congregating nearby. Also, estates should be built with distinct boundary lines to indicate the authority and jurisdiction of management. In this respect, designs of new housing estates are now much better planned than before and the management has been able to exercise more effective control over hawkers.

The provision of commercial facilities, i.e., shops and markets, has become a standard feature of the housing-estate design in the 1970s, although earlier schemes such as Wah Fu and Ping Shek had already set the pattern of development. More recently, commercial facilities on public-housing estates have achieved such tremendous success, both financially and from the viewpoint of planning, that many private developments have followed suit.

The typical shopping centre of a public-housing estate now contains almost the full range of shopping facilities from day-to-day wet-market stalls to high-class boutiques and jewelry shops. Also, there are invariably large restaurants and banks and, where justified, a full-service post office. A good example of such a shopping centre is on the Wo Che Estate at Shatin. This centre provides a pleasant air-conditioned shopping environment and full parking facilities for tenants and outsiders.

In Wo Che Estate, apart from this large commercial centre, there is provision for medical clinics close to residential blocks so that private medical practitioners can rent space to cater to the medical needs of the residents, while complementing the services of district government clinics. Also, a large number of cooked food stalls, each 45 m^2, are provided inside the estate. These stalls, grouped together, provide cheap snacks and meals for the estates' residents and are very popular. They are also becoming a regular feature of new public housing estates (Figure 2).

The provision of commercial facilities brings significant financial benefit to the Housing Authority, as shops and stalls are let out at full market rents. In the early days, a system of premium tendering at a fixed rent was adopted. Although this brought in a substantial lump-sum cash flow for the Authority, problems of tenancy rights and adjustment of rents on tenancy renewal were encountered. Also, such a system of tendering seemed to

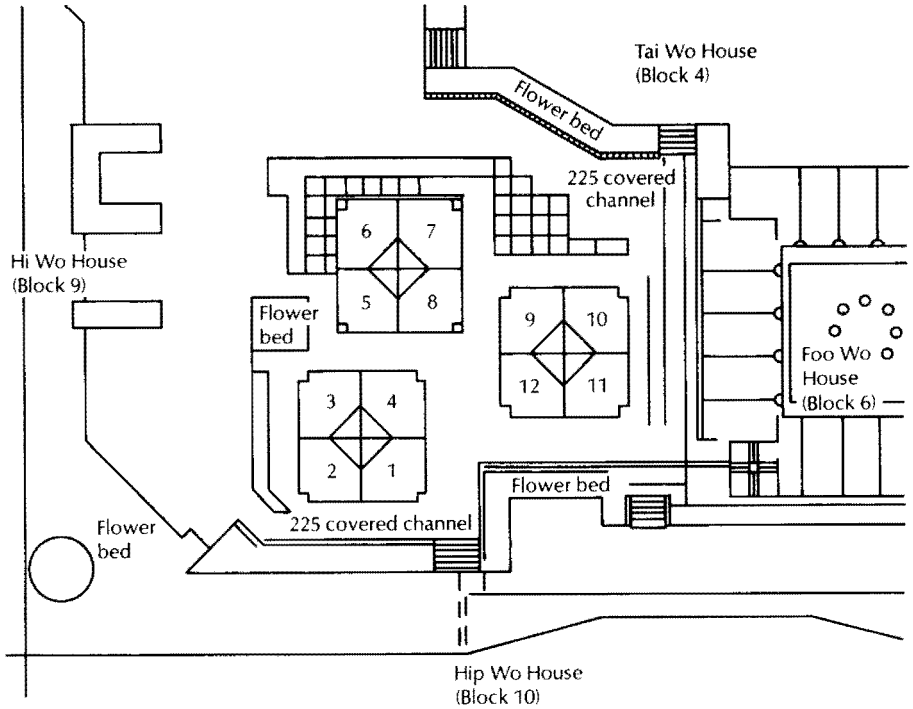

Fig. 2. Cooked food stalls (1 to 12) in Wo Che Estate, Shatin, Hong Kong.

give preference to the bigger shop operators who could afford a bigger financial capital outlay, whereas the smaller, but genuine, shopkeepers were very often excluded because of their inability to raise sufficient premiums.

Beginning with the estates in Shatin, a system of rental tendering has been used. Although the attractive lump-sum capital return for the Authority is thus diminished, the long-term financial and social effects more than compensate for this. A much higher rental return for the Housing Authority on the letting of its commercial premises has now been realized and, for the first time, a true indication of the rental values of the Authority's commercial properties can be established. In turn such rental levels can be used effectively for the renewal of tenancies for the Authority's old lettings. For example, a banking premises at Wo Che Estate was let as of mid-1980 at the rate of HK$500 to 550 (US$91 to 100)/m^2, a figure considered very high even in the centre of the most prestigious central area of Hong Kong. This price has since been exceeded by other lettings, giving sufficient evidence to the Authority's own advisers on rental values as well as guidelines for intending tenderers of the Authority's commercial properties. The example of Wo Che Estate shows the benefits that the Authority has been able to realize since it changed its policies on commercial lettings. The commercial rent roll is HK$2 015 836 (US$366 516)/month for 202 units as against that of HK$1 930 086 (US$350 924) for 5885 domestic units. More precisely, the rents collected from the commercial lettings in this estate range from HK$58.66 to 619.69 (US$10.7 to 112.7)/m^2 as compared with HK$94.29 (US$17.1)/m^2 from domestic lettings.

The Housing Authority has come to accept that there is no reason to give concessional rents to the commercial operators on the estates. This is a change from the early thinking that shopkeepers were providing services to the tenants and that they would not be able to make a good return from their business. Modern housing estates are generally large, providing a guaranteed clientele for the shopping centre. Shop premises are well planned and a sensible designation of trades keeps the tenants in fair, but not too intense, competition. Furthermore, big corporations, such as banks and supermarket chains, had come to realize that the public-housing tenants, now constituting nearly half of Hong Kong's population, provide a big potential market for their business. Because of the good mix of tenants, a phenomenon described in the next section, public-housing tenants are not necessarily drawn from the poorest population. In fact, because of the relatively stable rental expenditure pattern, an advantage not commonly enjoyed by private-sector tenants, public-housing tenants have more expendable cash for consumer goods and services. Thus a general pattern of high rental value for the Authority's commercial properties has now been established.

Other factors may contribute to the significant financial success of the Housing Authority's commercial properties. One factor that cannot be overlooked is the sensible position that the Authority takes in not relating the provision of commercial premises to their capital costs. Land is provided free by government in conjunction with the provision of rental housing. The cost of capital construction is absorbed in the total cost for the construction of the rental estate. The management is therefore not constrained in any way to recover investment costs. The net result of this had been a free hand and therefore a more imaginative design of shopping centres, and the subsequent freedom in a well-balanced trade designation was reflected in a good mix of tenants. The housing manager does not always aim to designate shops that will bring in the highest return on rentals, but rather works to provide a comprehensive range of shopping facilities that will bring life and efficiency to the shopping centres. Thus, instead of increasing the number of high-rental premises such as medicine shops, book stores, and sporting goods shops, the housing manager aims to provide shops of lesser commercial value as well so that the shopping centre contains a fairly comprehensive range of shops that will attract tenants and other shoppers. Large restaurants are normally also provided in or near the shopping centres. Such lettings do not individually always bring in the highest rental return to the Housing Authority, but, in the long run, the comprehensive facilities provided in the shopping centre enhance its total value.

Mix of Tenants

Some early public-housing estates in Hong Kong suffered from design faults and the layouts as well as external finishings tended to be dull. Tenants of these housing blocks came mostly from clearance operations, and, as a result of this rather single-class tenant structure, and generally lower-income status, the feeling of a low-income neighbourhood was created.

The new towns of Hong Kong are planned to overcome this problem. Better estate planning and management have produced a better living environment. Although a great proportion of the tenants in the new town housing estates still originate from clearance and squatter-control operations, a significant proportion of the tenants is drawn from the general waiting list. Generally those on the waiting list, although not necessarily of a higher economic group than the clearees or squatters, are, nevertheless, more responsive to improving their own living conditions. Many of these people, who may have waited for a long time in private-sector housing for a chance to improve their own living conditions, are more ready to put effort and money into up-grading their homes. They are more cooperative with the management and are generally better tenants. There is a general feeling from this group of waiting-list tenants that they are one step up the housing ladder. Clearees and squatters have been found to be more difficult as tenants, as they are generally less law-abiding tenants and, probably because of their previous free-for-all living pattern in the squatter areas, are less prepared to up-grade their living conditions.

Although the mix of voluntary and compulsory categories brings about a healthy heterogeneity of tenants, the new town housing estates have further designs by which to bring about a more middle-class suburban character. Most of the old public-housing estates managed by a Housing Authority in the urban areas of Hong Kong and Kowloon have now become really overcrowded because of the expansion of tenants' families, and the overcrowded situation cannot be easily solved within the resources of the Authority's urban estates. Hence, for those tenants wishing to improve their living conditions with larger accommodations the only opportunity for the majority of them would be to move to a new estate in a new town. The Housing Department actively encourages such movement by making available on each new housing estate a large number of new units for application by overcrowded urban public-housing tenants. As a result, many tenants who can afford to pay higher rents and the additional expenses of living in a new town have opted to move there. Generally these long-term public-housing tenants are usually better-off tenants and they have a fair income. Thus, an analysis of the median income of a tenant's family in the new towns is about 10% higher than that of families in an urban old estate. The average distribution of the origin of public-housing tenants of a new town is listed in Table 1.

The design of new town estates is now superior and includes many amenities in the form of sitting-out areas, play areas for children, and sport

Table 1. Origins of families moving into public-housing estates in a new town.

Category	(%)
Victims of fire and natural disaster	0.90
Compassionate rehousing	0.54
Tenants of buildings demolished as dangerous	0.07
Areas cleared for development	39.18
Tenants of properties acquired for urban renewal	0.22
Group B estates which are to be developed	4.33
Reuse of licence areas	1.60
Relief of overcrowding in public-housing estate	17.38
Waiting-list applicants	24.76
Junior civil servants and pensioners	9.69
Departmental quarters, shop tenants, etc.	1.33

grounds for teenagers. Other ancillary facilities such as community halls, schools, and car parks create a feeling of middle-class living in Hong Kong. No longer do architects concern themselves only with the design of accommodation, but are now prepared to accept management's suggestions for special amenities such as gardens, fountains, and water features as an integral part of the estate design. The layout of public housing in Hong Kong now compares extremely well with that of private developments.

The Authority's new higher-income home ownership schemes are also being provided fairly extensively inside, or adjacent to, lower-income rental housing estates, which further provides a more desirable mix of tenants.

Housing for the Elderly

As part of the proposal to assist in housing the elderly made by the government in 1977, the Housing Authority agreed specifically to provide accommodation for 10 000 elderly persons in addition to those who are normally housed with families. This is being achieved in three ways. Firstly, the 10-year program of hostels for the elderly is expected to accommodate 6050 persons by 1987–88 on the basis of one hostel in each new estate with more than 3000 flats. There are already 10 hostels with a total of 1300 places in operation; another 12 are due to open in the current financial year providing another 1482 places. Secondly, the Social Welfare and Medical & Health departments refer cases to the Housing Authority for rehousing through the compassionate quota (see Table 1) in which case about 300 persons over 60 years of age are being housed in a year. Thirdly, an annual quota of 300 flats within the waiting list (see Table 1) has been set aside since 1980–81 for the elderly. Although an ordinary applicant on the waiting list must have a family of at least three and will have to wait for about 7 years if he opts for Shatin, this Elderly Priority Scheme enables three unrelated elderly persons to join together and apply for a flat and have their waiting time reduced to about 1½ years if they opt for accommodation in the same new town. Whereas the first category of elderly is accommodated in hostels that are run by voluntary agencies and subsidized by the government, the second and third categories are housed in normal domestic flats and managed by housing staff within their own resources.

Housing Assistants play a nominal role in the day-to-day management of those hostels administered by voluntary agencies. In Shatin, every public-housing estate completed or under construction is provided with either a hostel for the elderly, or a social centre for the elderly, or both. Two sections are provided in a hostel: first, a "hostel" section for the able-bodied elderly who do their own cooking and generally look after themselves; and secondly, a "home" section for the more frail elderly, where meals are cooked and served.

On the other hand, Housing Assistants pay special attention and extra care to the old people housed in domestic flats as ordinary tenants. The great majority of the first year's quota for the Elderly Priority Scheme was allocated to Sha Kok Estate, the third public-housing estate in Shatin. Three persons occupy a flat of 23 m^2, each with their own small cubicle, and all share the use of a common dining room, kitchen, balcony, toilet, and

shower within the flat. One of them is nominated as the tenant who is responsible for payment of rent, electricity, gas, and water charges, but in practice everyone pays their own share. Because the estate is planned as a self-contained community, the elderly persons need not in fact leave the estate unless for occasional visits to their friends and relatives living elsewhere. They enjoy living in a community with children and young people, and, in this respect, they readily accept the idea of rehousing rather than the traditional arrangement of living in old people's homes in the countryside.

Apart from the normal counselling service provided to estate tenants, housing assistants provide special services to elderly persons to make their lives in the new homes more enjoyable. Housing assistants, during their weekly visits to their homes, identify the frail elderly and refer these cases to the Caritas Social Centre, a voluntary agency situated 2 km from the estate providing, among other things, home services to the elderly. These include house cleaning, daily meals, laundry, and escorting for medical consultation. Whereas estate doctors are willing to call at the homes of the elderly in cases of emergency, housing assistants are in close contact with the social workers who escort them for regular checkups at the geriatric unit of a hospital. Staff at the community nursing centre may also be requested to call at their homes regularly to provide nursing care and assistance on all aspects of rehabilitation and health education. They approach their housing assistant first whenever they need help.

By special arrangement, the hostel for the elderly in the same estate, being equipped with automatic laundry machines, may help elderly tenants to do daily laundry, and estate caretakers assist in delivery. Meals may be cooked and served for them together with those living in the hostel, if required.

A social centre for the elderly set up and run by a voluntary agency in the same estate provides social and recreational activities for the elderly so as to enrich their social life and to maintain their fitness both physically as well as psychologically. It is as much the concern of estate staff as social workers and medical staff to deal with the personal, social, medical, and housing problems encountered by the elderly in housing estates.

Rent Level

When the present Housing Authority was formed in 1973 by the amalgamation of the two big housing agencies of the former Housing Authority and Resettlement Department, one of the major problems was the question of the public-housing rental anomaly. First, rents for old resettlement estates, which normally are situated in the middle of the urban areas and therefore, in theory, are very attractive to public-housing tenants, were unreasonably low and could hardly meet their running costs. Second, the rents of the old Housing Authority estates, which had been calculated mainly on a cost basis, showed a rather irregular pattern in that some central and popular estates, because of the period in which they were built, were much lower than those of new estates that were constructed at the time of higher building costs.

When the new-town movement started, this problem became even more acute. The construction boom in Hong Kong took costs to a higher

level than before. If tenants from old housing estates were expected to move to new towns, one of the main objectives must be to keep the rents in these new town housing estates as low as possible. To achieve this, the Housing Authority adopted the concept of estate value rents. Briefly, rents for new public-housing estates would not be calculated on a cost basis. Instead, an estate rent would be fixed according to the convenience of locality as compared with other estates and the amenities they provided. In a nutshell, the rent of a new estate would be decided by comparing its rental value with that of an estate in the central area. So far this system has produced a highly comparable rental structure among the new estates in new towns, and one which has been accepted by the tenants. As a corollary of this, the Housing Authority's program of increasing the rents of outdated urban estates has also been generally accepted by the old tenants when they realize that their counterparts in new towns have to pay a modern public-housing estate rent.

Comprehensive Housing Management

In Hong Kong, the majority of public-sector housing is still in rental-housing estates. Quite naturally, many problems of housing management encountered in other parts of the world also have to be faced in Hong Kong. Generally, Hong Kong has faced up to the challenge of managing a large number of public-housing estates for over 40% of the total population of Hong Kong in an efficient manner. This may be attributed to a sensible system of comprehensive management adopted by the Authority.

It is not the intention of this paper to go into the detail of the system of comprehensive housing management in Hong Kong. A few highlights need only be mentioned.

In spite of the pressure from several quarters, the Housing Authority is still using the method of door-to-door rent collection. Critics generally base their arguments on the fact that there is a great security risk as well as a lack of efficiency in such a system. The first point has never really been very serious in Hong Kong and attacks on rent collectors are few and far between. It is suggested that with judicious arrangements for rent collection trips, potential risks can be diminished. As regards the second point it is really not accurate to say that the system of door-to-door rent collection is in any way less efficient than any other system. Before the present system of rent collection was introduced by the Housing Authority, rent arrears were recorded at up to 20%. The Authority's actual rent arrear records are now rarely 1% of rents collectable. The Housing Authority now has a monthly rent roll of HK$90 (US$16.4) million. A 20% arrears would mean a constant loss of revenue of about HK$18 (US$3.3) million. Apart from this loss of revenue the social significance of responsible tenants who have a trained habit of paying rents regularly cannot be overemphasized. Taking a wider perspective, if Hong Kong should ever face a higher rent arrears record, as experienced in many other countries, then very heavy housing subsidies would have to be mobilized from other sources and this would make the housing program less successful.

Another important aspect of comprehensive management is the timely attention given to proper maintenance of buildings and grounds. The

Housing Assistant is entrusted with the responsibility of recording, ordering, and subsequent inspection of completed work, with respect to items of repair and maintenance. The Housing Assistant has the responsibility of seeing that no delays are being experienced in the execution of repairs, and is also responsible for dealing with tenants' requests for repairs and making the decision whether the tenant or the landlord should be responsible for their payment. The other important contribution of the management staff is their ability to provide feedback information to architects and maintenance officers with regard to physical design as well as the durability of materials, and users' reactions to the usage of facilities provided. The Housing Assistants derive their knowledge partly from their practical experience and partly from the invaluable contact with estate tenants.

Apart from the useful feedback information on design, maintenance, and repairs, the regular contacts with tenants provide the housing staff with a fairly reliable and accurate source of information regarding tenants' reaction to certain policies of the Housing Authority as well as other important matters affecting the general population of Hong Kong. An important example of this is the Authority's ability to increase rents on its rental housing with very little opposition from its tenants. The Housing Authority was able to make full use of estate management staff's assessments of the tenants' reaction to put forward rent increases that were generally acceptable to the tenants. Because of their regular and wide contact with tenants, and the satisfactory relationship so very often successfully built up, housing managers and their staff are able to give very useful comments and views on issues of a topical nature. This has proved very useful in many policy decisions.

The implementation of comprehensive housing management requires the basic element of a well-trained management staff of high calibre. Training of this staff is very expensive and time consuming, but the Authority has quite wisely taken a correct course. It now enjoys efficient service of a staff that not only provides competent implementation of its policies as well as giving good protection to the value of its assets by efficient maintenance and management, but also renders very efficient service to the tenants thus creating contented and well-satisfied communities. The ultimate purpose of housing provision is thus ensured.

Conclusions

The development of new towns aimed at creating a new pattern of happy life for their residents presents many new challenges for those concerned. Hong Kong seems to have met the challenges with confidence and efficiency. Maybe Hong Kong has been fortunate in possessing plentiful technical, managerial, and financial resources. However, the value of the experience of Hong Kong lies in the fact that, given the enormous constraints of scarcity of land and a huge population problem, reasonable living conditions have been created for the people through sound planning and management. So far, the experience of the creation of new towns in Hong Kong has been a happy one. Well-planned and coordinated building programs ensure that services are provided in time and that many of the

difficulties that could be experienced by those moving early to new towns are reduced. The emphasis on community development permits tenants to react and communicate at an early stage.

As far as estate management is concerned, new towns provide a new generation of public housing, probably akin to middle-class suburban living of the West. This has been brought about by an enlightened public landlord who believes in providing the best for its tenants within its limitations. More important, a well-trained management staff who recognize the rights of the tenants and who commit themselves to providing the best service for both landlord and tenant, go far in bringing about the intended results.

The Hong Kong experience has shown that public-housing tenants can and do respond to good management. They appreciate the opportunity afforded them of building a home for their families, where their children can grow up to become useful members of society. They also demonstrate that they can be responsible tenants through their rent habits, their careful use of communal facilities, and diligent up-keep of their own homes.

Thus, the future looks good for the immense public-housing program of Hong Kong. The production of a large number of flats is complemented by an efficient system of management, a practice very often neglected by public-housing bodies elsewhere. No doubt new problems will arise as the new towns continue to develop, but new techniques and skills will be learned to meet these problems. However the experience in this early stage of our new towns development seems to promise a fairly bright future.

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Appendix: Currency Conversion Table*

Singapore	S$2.00 = US$1.00
Hong Kong	HK$5.50 = US$1.00
Malaysia	M$2.20 = US$1.00
Philippines	P7.50 = US$1.00
Thailand	B200 = US$1.00
Indonesia	Rp600 = US$1.00

*In effect at the time the papers were prepared.